

# BRFSS

## Health Risk Behaviors of Adult Missourians

2001  
*Annual Report*

Behavioral  
Risk Factor  
Surveillance  
System



Missouri Department of Health and Senior Services  
Division of Community and Public Health  
Bureau of Health Informatics

## REPORT INFORMATION

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Target Audience: Local Public Health Agencies, health and allied health professionals, non-profit and non-governmental organizations, and the Centers for Disease Control and Prevention (CDC).

Description: This report presents data collected from the CDC-established annual Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is designed to assess the health status and monitor trends in disease pattern and risk behaviors that are linked to health. This surveillance system provides information to assist public health agencies for planning, implementing, and evaluating public health interventions. This data can also drive advocacy efforts to promote community and systems change for the betterment of Missouri's population.

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### 2001 Behavioral Risk Factor Surveillance System Annual Report: Health Risk Behaviors of Adult Missourians

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# 1 INTRODUCTION

## ABOUT THIS REPORT

This report summarizes data from the Missouri Behavioral Risk Factor Surveillance System for 2001 on health risk behaviors (i.e., smoking, physical activity, and getting preventive screenings) and chronic health conditions (i.e., diabetes, asthma, obesity) that affect Missouri's adult population. The data presented in this report represents the knowledge, perceptions and health status of Missouri's adult population. Although there have been some improvements in health of adult Missourians, there continues to be public health challenges that face our community. The Missouri Department of Health and Senior Services (DHSS) strives to protect and promote the health of all Missourians, at every stage in their lives.

## WHAT IS THE BRFSS?

The Behavioral Risk Factor Surveillance System (BRFSS), established in 1984 by the Centers for Disease Control and Prevention (CDC), is an on-going surveillance system that is conducted in all 50 states and the three territories of the United States. The BRFSS collects data on health risk behaviors on a monthly basis among adults, 18 years or older, residing in households with a telephone. Individuals are contacted randomly through a random digit-dialing technique.

The BRFSS contains three sections in the questionnaire: core, optional modules, and state-added questions. The core questions are a set of questions developed by CDC that must be asked by each state. The core questions allow comparisons across states. The optional module questions are optional and can be used by the states without any modification to the question. The state-added questions are timely questions determined by each state based on their specific need.

The data acquired from the BRFSS is used to estimate the prevalence of health risk behaviors and the burden of chronic diseases. The data is also used to monitor trends and evaluate public health programs and policies. More information on the BRFSS can be found at: <http://www.cdc.gov/brfss/>.

## ANALYSIS OF DATA

Trends that are presented in this report have utilized data from the BRFSS Missouri Information for Community Assessment (MICA), which is a computerized software system that allows direct access to BRFSS data (<http://www.dhss.mo.gov/MICA/>).

The weighted prevalence estimates and 95% confidence intervals presented in the results section of each topic were generated using SAS statistical software. Prevalence estimates and confidence intervals were produced for the selected indicators and cross-tabulated by socio-demographic factors of gender, race, age, income, and education.

**Weighted estimate** – an estimate that is adjusted to represent the population from which the sample was taken (e.g., adult population of Missouri, 18 years and older).

Missouri is divided into 115 counties. The sample size from each county, on an annual basis, is too small to make conclusive estimates by county. Therefore, these 115 counties are clustered into seven geographical BRFSS regions: Kansas City Metro, St. Louis Metro, Central, Southwest, Southeast, Northwest, and Northeast. (Appendix 1 for corresponding counties for each region.)

## 2 MISSOURI TRENDS

### Change for the better:

- Less current smoking
- More with health care coverage
- More physically active
- More pneumonia vaccination

### Change for the worse:

- More perceiving general health as poor
- More asthma
- More high blood pressure
- More high cholesterol
- More diabetes
- More overweight
- More obese

**Table 2.1. Prevalence of behavioral risk factors in Missouri and Nationwide (including the three territories of Puerto Rico, Virgin Islands, and Guam) and Missouri's ranking, BRFSS 2001**

	MO (%)	US (%)	Missouri Ranks
Current Smoking	25.9	22.8	10 <sup>th</sup>
No health care coverage	10.6	13.3	37 <sup>th</sup>
No LTPA	27.4	25.7	14 <sup>th</sup>
Pneumonia vaccination	80.3	78.1	8 <sup>th</sup>
Poor General Health	4.7	3.6	12 <sup>th</sup>
Asthma	12.0	11.2	18 <sup>th</sup>
High Blood Pressure	26.5	25.6	19 <sup>th</sup>
High cholesterol	31.3	30.2	14 <sup>th</sup>
Diabetes	6.6	6.5	25 <sup>th</sup>
Overweight	36.0	37.2	43 <sup>rd</sup>
Obese	22.5	21.0	11 <sup>th</sup>

Source: Centers for Disease Control and Prevention, <http://www.cdc.gov/brfss>, 2001.

### 3 DEMOGRAPHICS OF MISSOURI BRFSS RESPONDENTS

For 2001 BRFSS, there were a total of 4,178 respondents. The majority of the respondents were female (52.5%), white (87.7%), married (62.2%), and employed (62.9%). The distribution of this sample by age, race, education level, marital status, employment, and income are presented in Table 3.1.

**Table 3.1. Distribution of economic and demographic characteristics of Missouri adult respondents, BRFSS 2001**

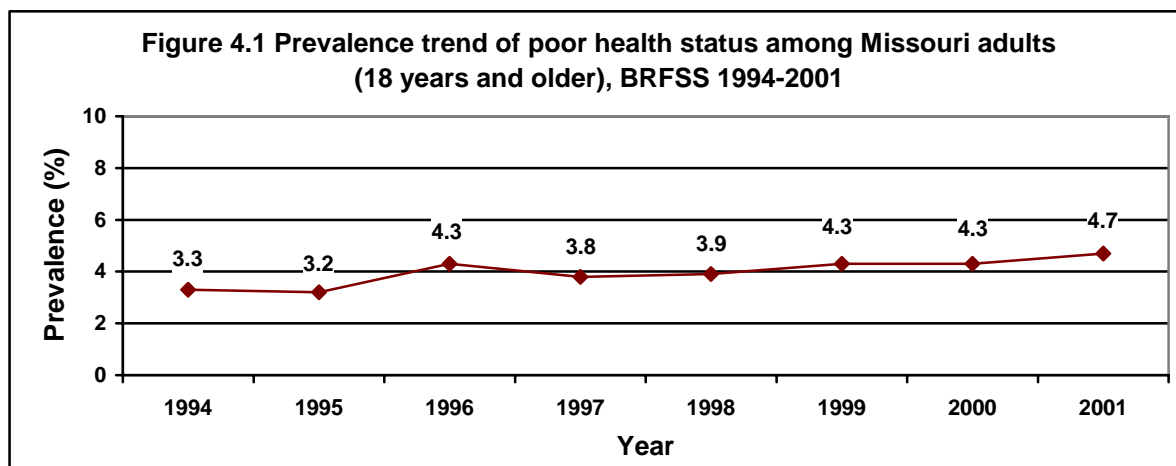
Characteristic	UNWEIGHTED SAMPLE SIZE	WEIGHTED PERCENT
	N	%
OVERALL	4178	100
GENDER		
MALE	1653	47.2
FEMALE	2525	52.5
AGE GROUP		
18-24	462	12.7
25-34	625	17.6
35-44	786	19.9
45-54	786	17.9
55-64	588	12.7
65-74	488	11.8
75 AND OLDER	411	7.4
RACE/ETHNICITY		
WHITE	3739	87.7
BLACK	245	8.5
OTHER	132	3.8
HISPANIC	68	1.5
EDUCATION		
LESS THAN HIGH SCHOOL	585	12.5
HIGH SCHOOL	1485	33.7
COLLEGE 1-3 YEARS	1160	28.6
COLLEGE GRADUATE	941	25.2
MARITAL STATUS		
SINGLE	661	16.6
MARRIED	2296	62.2
DIVORCED, WIDOWED, SEPARATED	1151	19.1
UNMARRIED COUPLE	64	2.1
HOUSEHOLD INCOME		
<\$25,000	1308	28.4
\$25-34,999	672	16.1
\$35-49,999	741	22.3
\$50-74,999	525	18.0
\$75,000 AND OVER	397	15.3
EMPLOYMENT		
EMPLOYED	2519	62.9
UNEMPLOYED	140	3.4
UNABLE TO WORK	215	4.5
HOMEMAKER	251	5.9
STUDENT	117	3.7
RETIRED	933	19.5

## 4 GENERAL HEALTH STATUS OF MISSOURIANS

### Background

Self-perceived general health status is an indicator for functional status, morbidity and mortality.<sup>i</sup> It is an important measure in assessing health status and health-related quality of life (HRQOL). Studies examining factors associated with the risk of mortality indicate that, when adjusting for gender, age, income, and other factors, the risk increases 2- to 6-fold among those who reported poor health compared to those who reported excellent health.<sup>ii</sup> However, age was a very strong predictor of mortality.

In Missouri, the perception of one's own health as being poor is on a steady rise (Figure 4.1). Prevalence of poor general health status shows an increasing trend from 3.3% in 1994 to 4.7% in 2001.



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1994-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

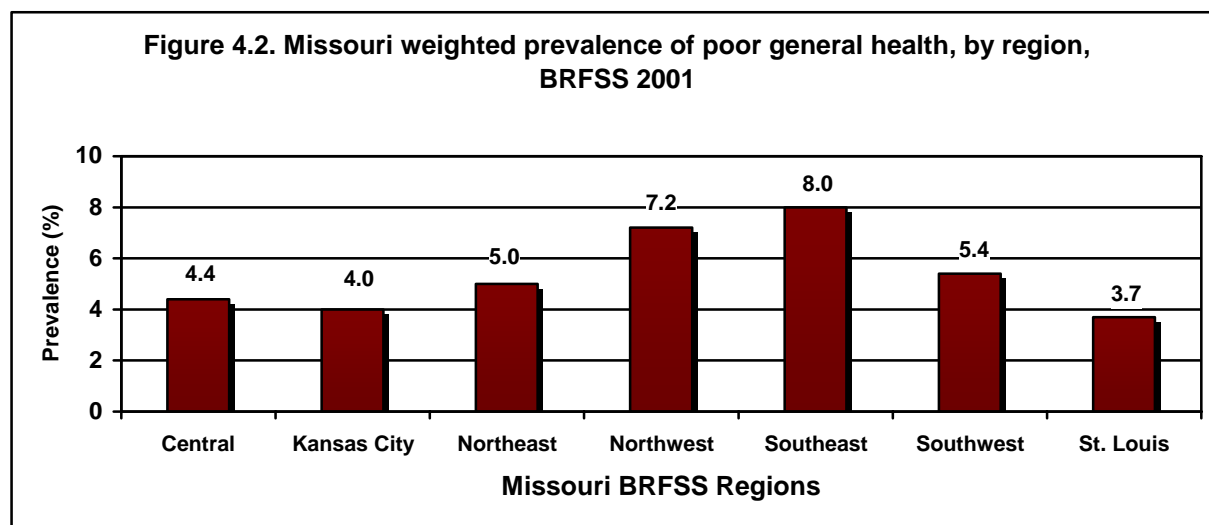
### General Health Status Results

#### *Survey Question:*

“Would you say that in general your health is excellent, very good, good, fair, or poor?”

In 2001, when asked how respondents perceived health status in general, 20.5% reported excellent health, 34.7% said “very good”, 29.3% “good”, 10.8% “fair”, and 4.7% “poor” general health status. Geographically, the Northwest and Southeast regions of the state show the highest prevalence of respondents reporting poor health, 7.2% and 8.0%, respectively (Figure 4.2).

When looking at the prevalence of poor health status by gender, race, education, and income, there is a higher prevalence in blacks than whites. A significant correlation to education and income levels was evident. As education and income levels decrease, the prevalence of poor health status is significantly greater (Table 4.1). When stratified by age groups, there is a notable increase in poor health status with increasing age. This increase may be attributed, in part, to increase prevalence of disease and associated disability that occur in older age groups.

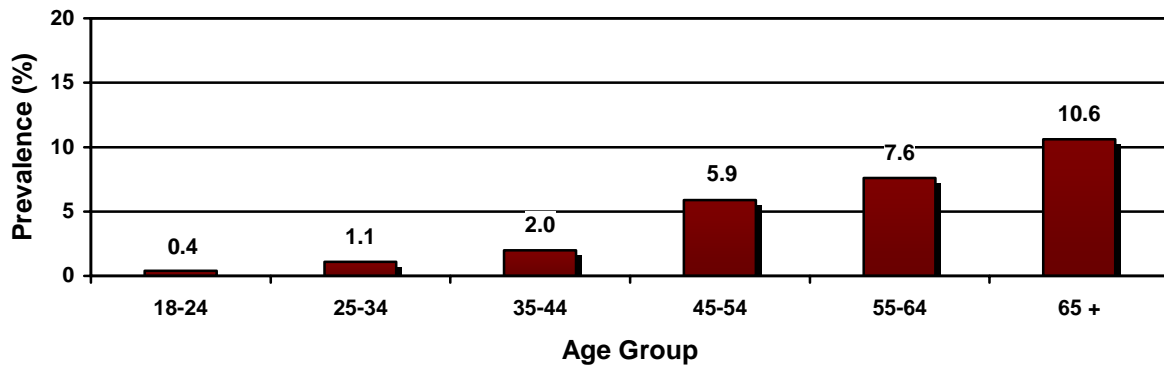


Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 4.1. Missouri weighted prevalence of self-reported perception of general health status as poor, by socio-demographics, BRFSS 2001**

Demographic	Poor General Health Status	
	Prevalence (%)	95% CI
Total	4.7	3.9–5.5
Gender		
Female	4.6	3.5–5.6
Male	4.9	3.5–6.2
Race		
Black	5.2	1.4–8.9
Other	5.2	0.0–10.9
White	4.6	3.7–5.5
Education		
Less than High School	17.1	12.9–21.2
High School	4.3	2.8–5.9
Some college/college grad	2.1	1.4–2.7
Income		
<\$15,000	21.3	15.9–26.8
\$15-24,999	6.4	4.4–8.4
\$25-34,999	2.6	1.2–3.9
\$35-49,999	1.7	0.6–2.9
\$50-74,999	1.1	0.0–2.4
\$75,000+	0.1	0.0–0.2

**Figure 4.3. Missouri weighted prevalence of self-reported perception of general health status as poor, by age, BRFSS 2001**



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.



## 5 HEALTH-RELATED QUALITY OF LIFE

### Background

Health-related quality of life (HRQOL) focuses on how diseases and other health conditions impact an individual's daily functionality, productivity, and a sense of overall well-being. With increasing longevity due to the prevention

of many infectious diseases, chronic diseases have become more prevalent, particularly those affecting the adult population. The physical discomfort, disability, and emotional distress associated with these diseases then impact the individual's overall quality of life. A measure of unhealthy days, which is a composite of the number of days the respondent experienced poor physical or mental health in the past 30 days, is used to indicate an individual's health-related quality of life.

#### Health-related quality of life

"An individual's or group's perceived physical and mental health over time".

### Health-Related Quality of Life Results

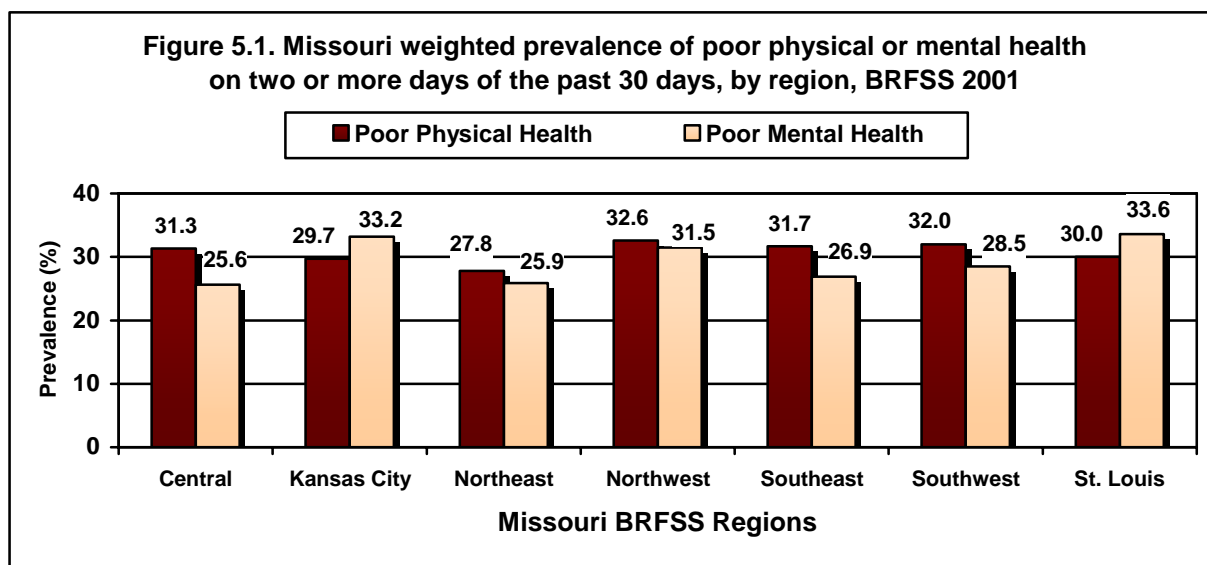
#### *Survey Questions:*

"Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?"

"Now think about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"

"During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?"

The regions of Missouri show very similar prevalence of poor physical or mental health on two or more days in the past 30 days (Figure 5.1). Table 5.1 shows that females experience more poor physical or mental health on two or more days in the past month than do their male counterparts. Low education and income levels show higher prevalence of poor physical or mental health; the prevalence decreases as education and income levels increase.

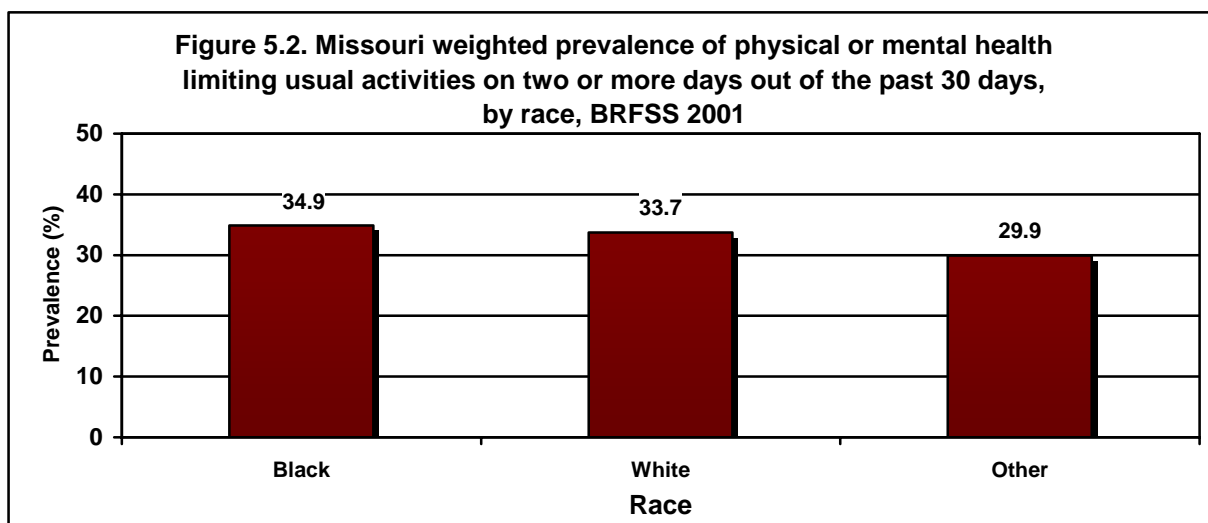


Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 5.1. Missouri weighted prevalence of poor physical or mental health on two or more days of the past 30 days, by socio-demographics, BRFSS 2001**

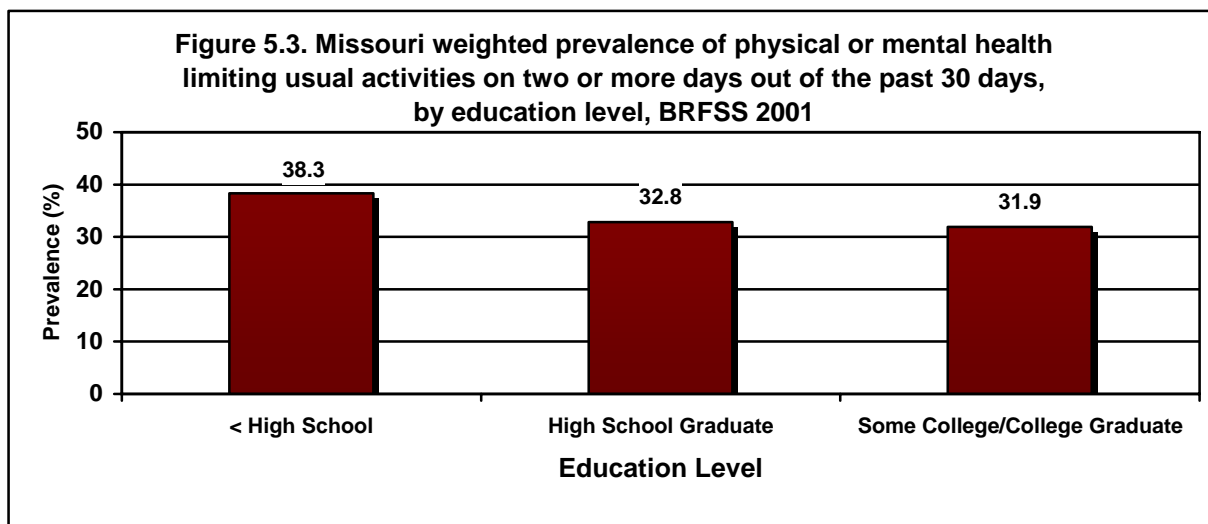
Demographic	Poor Physical Health 2+ days of 30		Poor Mental Health 2+ days of 30	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	30.6	28.6-32.5	30.7	28.7-32.7
Gender				
Female	34.6	32.0-37.1	34.5	31.9-37.0
Male	26.2	23.3-29.1	26.6	23.6-29.6
Race				
Black	29.8	22.2-37.5	27.9	20.1-35.7
Other	26.9	18.0-35.9	36.2	25.8-46.7
White	31.0	28.9-33.1	30.4	28.3-32.5
Education				
< High School	41.3	35.7-47.0	36.3	30.5-42.0
High School	30.3	27.0-33.6	30.2	26.9-33.6
> High School	28.4	25.8-31.0	29.8	27.2-32.5
Income				
<\$15,000	47.7	41.6-53.8	39.1	33.2-45.0
\$15-24,999	39.5	34.8-44.1	32.5	28.1-36.9
\$25-34,999	30.2	25.5-34.9	32.9	28.1-37.6
\$35-49,999	27.2	22.8-31.7	31.9	27.0-36.8
\$50-74,999	24.2	19.5-29.0	30.9	25.5-36.2
\$75,000+	23.4	17.9-28.8	26.7	21.0-32.4

In addition to these measures of healthy days and quality of life, questions on activity limitations due to poor physical or mental health were also assessed. Over 33% of respondents reported that they were prevented from doing their usual activities due to poor physical or mental health on two or more days out of the past 30 days. Figure 5.2 shows that nearly 35% of blacks and 34% of whites were limited in their usual activities.

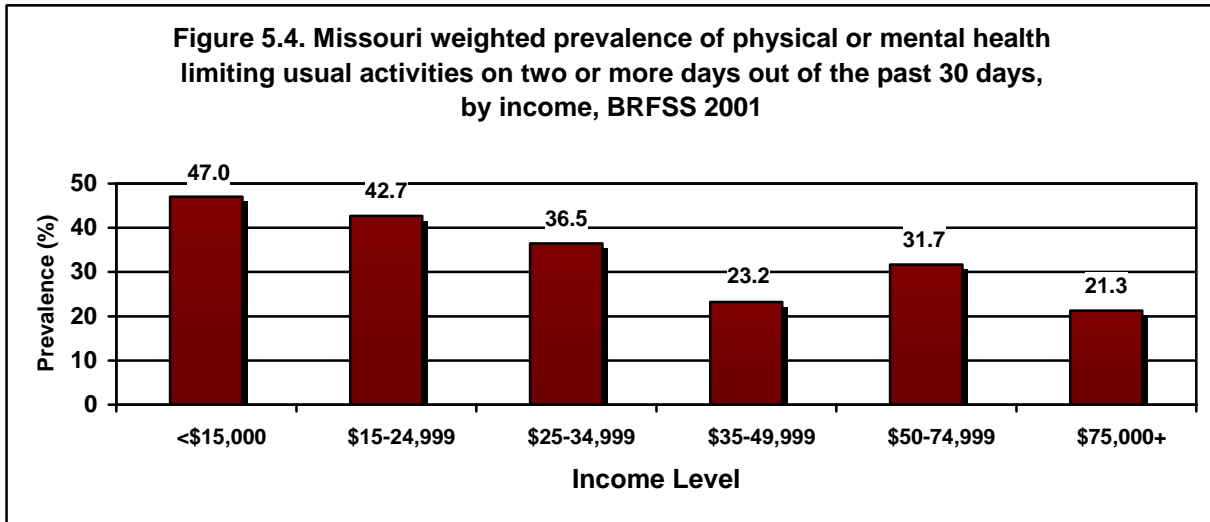


Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

Those with less than a high school education (38.3%) show a higher prevalence of activity limitations as well as those with incomes of less than \$15,000 with a prevalence of 47.0% (Figure 5.3 - 5.4).



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

## 6 DISABILITY

### Background

Over 50 million Americans report having conditions that cause disability.<sup>iii</sup> Traffic accidents, violence-related injuries, and falls are considered the leading causes of traumatic brain and spinal cord injuries, which comprise the most severe disabling injury conditions.<sup>iv</sup> Disabilities were defined as having difficulty with one or more of a wide range of activities, which include personal activities (e.g., bathing, dressing, housework) or measures in physical ability (e.g., lifting up to 10lbs, climbing stairs, or walking three blocks). Another indicator of disability was the need for using special equipment, such as a wheelchair, cane or walker for an extended period of time in order to perform regular activities.

### Disability Results

#### *Survey Questions:*

“What is the major impairment or health problem that limits your activities?”

“Are you limited in any way in any activities because of physical, mental, or emotional problems?”

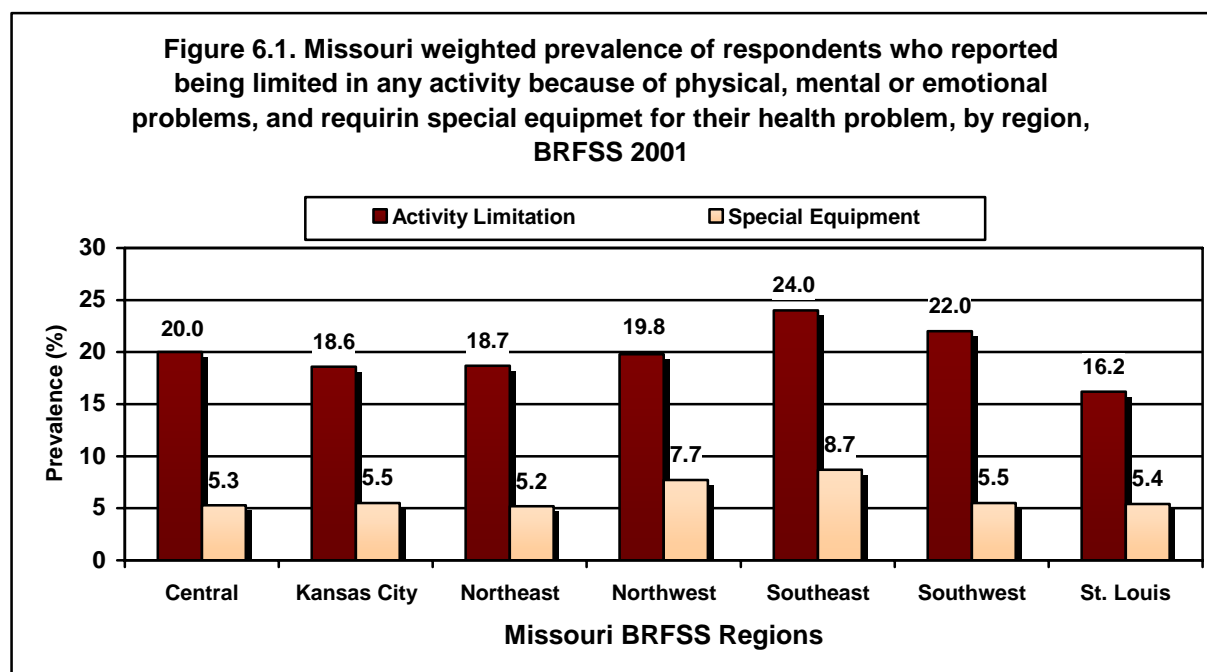
“Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?”

Back or neck problems (3.6%) followed by arthritis or rheumatism (3.3%) were the primary health conditions that limited individuals in performing their activities (Table 6.1). Regionally, Figure 6.1 show the highest prevalence of activity limitation occurs in the Southeast region (24.0%) while the lowest is in St. Louis (16.2%). Nineteen percent of adult Missourians are limited in any activity because of physical, mental or emotional problems (Table 6.2). Whites are more likely (19.9%) than blacks (14.2%) and other races (9.5%). Low education and income levels are associated with an increased likelihood of having reported a limitation due to physical, mental or emotional problems.

Over 22% of adult Missourians require special equipment due to their health problems (Table 6.2). Men are more likely to require special equipment compared to women. Blacks (34.4%) are more likely to require special equipment than whites (21.7%) and other races (18.9%). Low education and income levels are associated with an increased likelihood of requiring special equipment due to health problems.

**Table 6.1. Missouri weighted prevalence of what respondents considered their major impairment or health problem that limits their activities, BRFSS 2001**

<b>What is the major impairment or health problem that limits your activities?</b>		
<b>Responses</b>	<b>Prevalence (%)</b>	<b>95% CI</b>
Arthritis/rheumatism	3.3	2.6-3.9
Back or neck problem	3.6	2.8-4.4
Fractures, bone/joint injury	1.5	1.0-2.0
Walking problem	1.5	1.1-2.0
Lung/breathing problem	1.3	0.9-1.7
Hearing problem	0.2	0.0-0.4
Eye/vision problem	0.7	0.2-1.1
Heart problem	1.3	0.8-1.7
Stroke problem	0.2	0.04-0.4
Hypertension	0.1	0.0-0.2
Diabetes	0.4	0.2-0.6
Cancer	0.3	0.1-0.4
Depression/anxiety/emotional	0.8	0.5-1.2
Other impairment	3.8	3.0-4.5



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

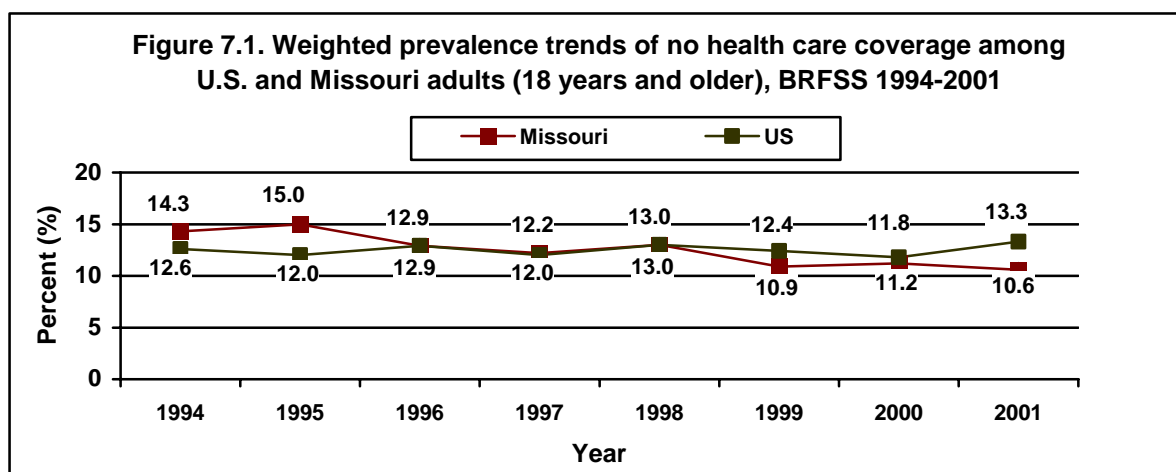
**Table 6.2. Missouri weighted prevalence of respondents who reported being limited in any activity because of physical, mental or emotional problems, and those requiring special equipment for their health problem, by socio-demographics, BRFSS 2001**

Demographic	Activity Limitation		Special Equipment	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	19.0	17.4-20.6	22.5	20.7-24.2
Gender				
Female	19.8	17.7-21.8	20.6	18.5-22.8
Male	18.2	15.8-20.6	24.4	21.7-27.1
Race				
Black	14.2	8.6-19.8	34.4	25.9-42.8
Other	9.5	50.1-13.8	18.9	10.6-27.1
White	19.9	18.1-21.6	21.7	19.9-23.5
Education				
< High School	33.7	28.5-38.9	27.6	22.6-32.6
High School	19.1	16.4-21.9	22.8	19.9-25.8
> High School	15.5	13.6-17.5	21.2	18.8-23.5
Income				
<\$15,000	40.5	34.7-46.3	28.8	23.3-34.4
\$15-24,999	26.2	22.2-30.2	24.5	20.5-28.6
\$25-34,999	20.8	16.7-24.9	24.9	20.5-29.4
\$35-49,999	13.8	10.2-17.4	22.0	17.8-26.2
\$50-74,999	10.3	7.1-13.4	22.2	17.6-26.8
\$75,000+	10.8	6.7-14.9	18.6	13.5-23.8

## 7 HEALTH CARE ACCESS AND INSURANCE COVERAGE

### Background

Respondents who answered “yes” to the question “Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?” were determined to have health insurance coverage. In the United States, the percentage of people without health insurance coverage has been steadily rising from 12.6% to 13.3% among adults 18 years and older. Missouri, on the other hand, shows a steady decline in the percentage of adults who do not have health insurance coverage (Figure 7.1). A report by the U.S. Census Bureau presents data on uninsured Americans by race and shows that a large proportion of uninsured are foreign-born residents and among that population, those who are not a citizen of the United States show the highest percentage of uninsured.<sup>v</sup>



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1994-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

Source: Centers for Disease Control and Prevention, 1994-2001, <http://www.cdc.gov/brfss/>

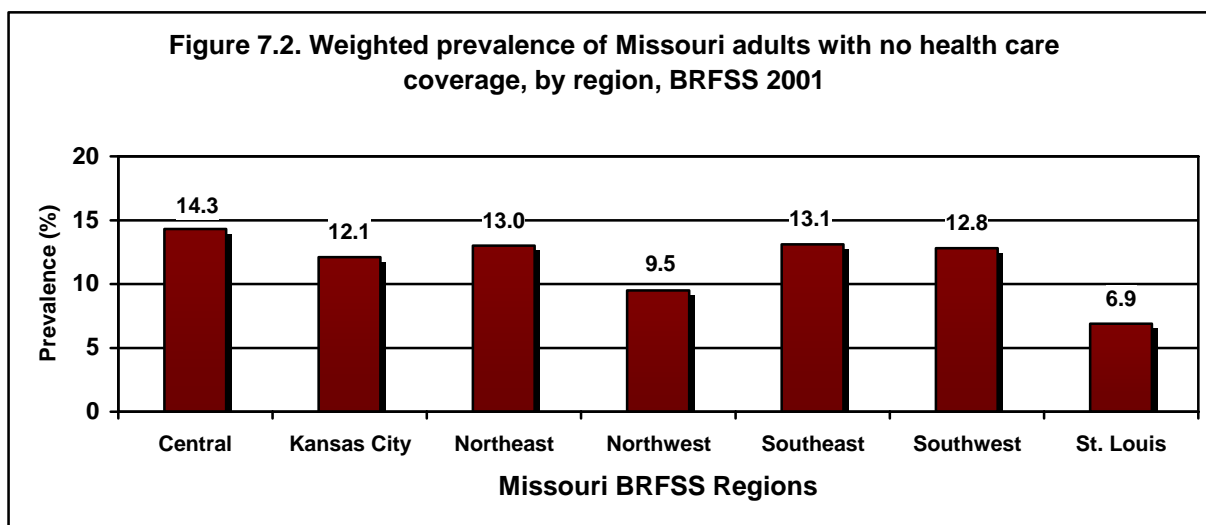
### Health Care Coverage Results

#### **Survey Question:**

“Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?”

The percentage of respondents who reported not having health insurance was highest in the Central region of Missouri with the Northeast and Southeast trailing behind (Figure 7.2). The St. Louis region had the lowest percentage of adults without health insurance coverage.





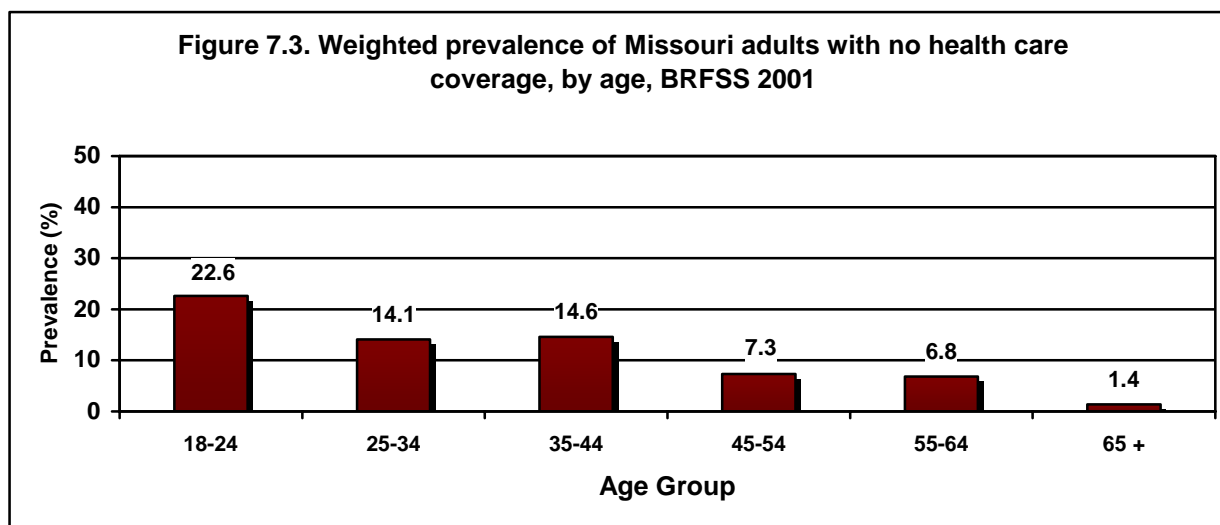
Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

In Missouri, 10.6% of adults did not have health insurance coverage in 2001. In Table 7.1, data indicates that males show a higher percentage of no coverage compared to females. Blacks are much more likely to not have health insurance coverage compared to whites, 14.9% and 9.7%, respectively. However, the other race group shows the highest prevalence at 22.5%. As education level increases, the percentage of uninsured individuals declines. Similarly, as income increases, the percent of individuals who lack health insurance coverage decreases. However, those in the income bracket of \$15-24,999 show the highest percentage of uninsured (22.7%).

Adults 18 to 24 years of age are more likely than any other age group to have no health insurance coverage (Figure 7.3). Those 65 years and older show the lowest percentage of uninsured individuals, primarily due to Medicare services.

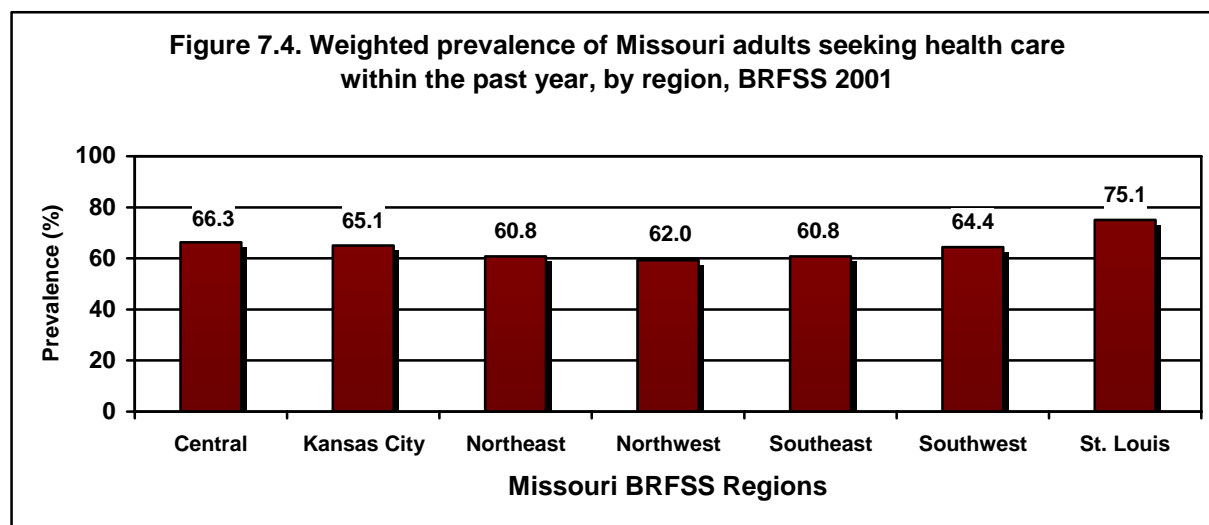
**Table 7.1. Weighted prevalence of Missouri adults with no health care coverage, by socio-demographics, BRFSS 2001**

Demographic	No health care coverage	
	Prevalence (%)	95% CI
Total	10.6	9.4-11.9
Gender		
Female	9.8	8.4-11.2
Male	11.6	9.4-13.7
Race		
Black	14.9	7.6-22.3
Other	22.5	14.1-30.9
White	9.7	8.4-10.9
Education		
Less than High School	16.5	12.1-21.0
High School	13.6	11.3-16.0
Some college/college grad	7.4	5.9-8.9
Income		
<\$15,000	19.2	14.8-23.7
\$15-24,999	22.7	18.5-26.9
\$25-34,999	14.2	10.5-18.0
\$35-49,999	7.3	4.3-10.4
\$50-74,999	4.3	2.0-6.6
\$75,000+	1.3	0.3-2.4



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

Individuals residing in St. Louis were more likely to seek health care in the past year than other regions of Missouri (Figure 7.4). Approximately 67% of Missouri adults sought health care within the past year (Table 7.2). Women were much more likely than men to seek health care, 81.5% and 53.7%, respectively. Respondents with an income below \$15,000 and those with an income greater than \$75,000 were more likely to seek health care within the past year than those of other income levels.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 7.2. Weighted prevalence of Missouri adults seeking healthcare within the past year, by socio-demographics, BRFSS 2001**

Demographic	Seeking Healthcare within the past year	
	Prevalence (%)	95% CI
Total	67.3	63.7-70.9
Gender		
Female	81.5	77.7-85.3
Male	53.7	48.1-59.4
Race		
Black	60.6	41.9-79.4
Other	60.0	42.5-77.5
White	68.8	65.1-72.4
Education		
Less than High School	64.4	54.6-74.2
High School	66.5	61.1-72.0
Some college/college grad	69.2	63.8-74.6
Income		
<\$15,000	71.9	62.8-81.0
\$15-24,999	65.6	57.4-73.8
\$25-34,999	58.2	50.0-66.5
\$35-49,999	64.9	56.3-73.4
\$50-74,999	65.8	54.4-77.1
\$75,000+	75.8	65.0-86.5



For more information about arthritis and programs offered to address arthritis in Missouri, please refer to <http://www.dhss.mo.gov/Arthritis/> and CDC's website <http://www.cdc.gov/arthritis/arthritis/index.htm>.

## Arthritis Results

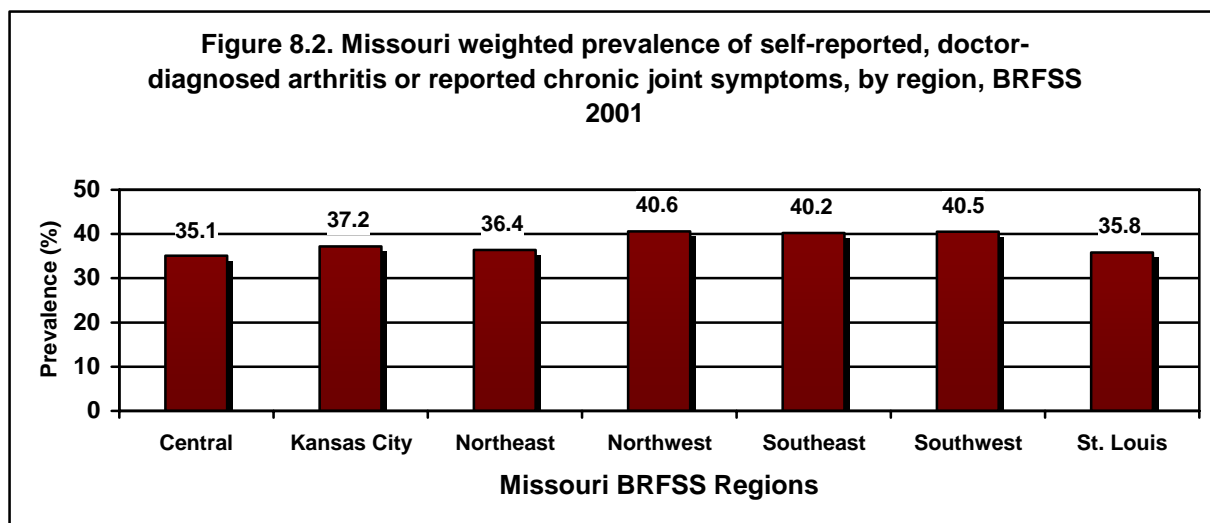
### *Survey Questions:*

“Have you ever been told by a doctor that you have arthritis?”

“During the past 12 months, have you had pain, aching, stiffness or swelling in or around a joint?”

An estimated 37.4% of Missouri adults have been diagnosed with arthritis or have reported chronic joint symptoms. The prevalence of arthritis or chronic joint symptoms is similar across the regions of Missouri with the Northwest and the Southern part of the state showing slightly higher prevalence estimates (Figure 8.2).

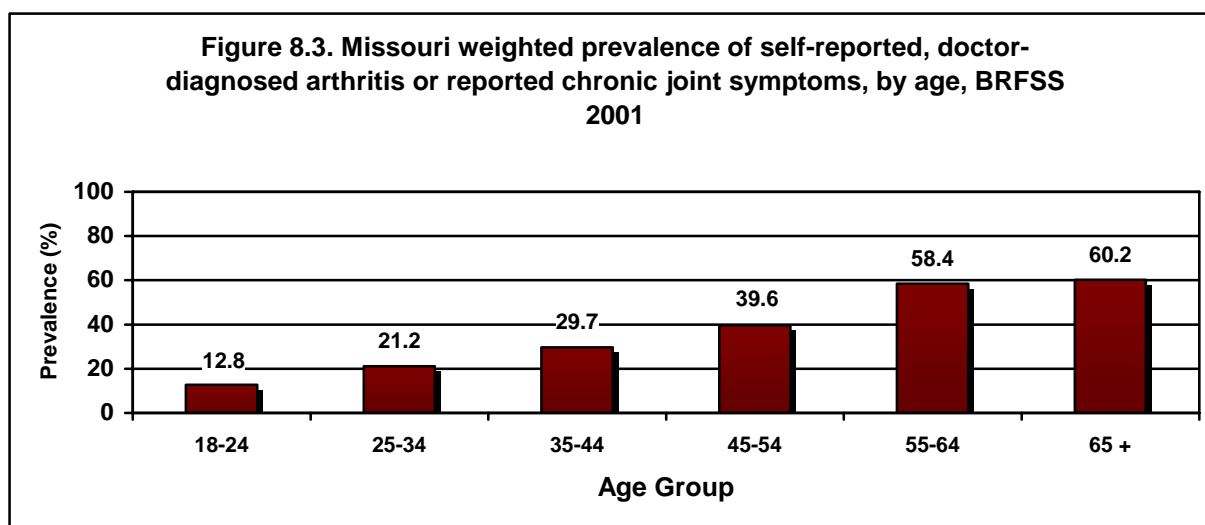
Table 8.1 shows that women have a higher prevalence with 40.8% compared to men with a prevalence of 33.5%. Whites are much more likely to be diagnosed with arthritis and exhibit chronic joint symptoms than blacks or any other race group. Those respondents with less than a high school education and an income level of less than \$15,000 were much more likely to have arthritis or chronic joint symptoms, 50.8% and 55.2%, respectively. In Table 8.3 it is evident that the prevalence of arthritis or chronic joint symptoms increases with increasing age. The prevalence is greatest in the 65 and older age group at 60.2%.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 8.1. Missouri weighted prevalence of self-reported, doctor-diagnosed arthritis or reported chronic joint symptoms, by socio-demographics, BRFSS 2001**

Demographic	Arthritis or Chronic Joint Symptoms	
	Prevalence (%)	95% CI
Total	37.4	35.4-39.3
Gender		
Female	40.8	38.2-43.4
Male	33.5	30.5-36.5
Race		
Black	27.1	19.9-34.4
Other	28.9	19.7-38.1
White	38.6	36.5-40.8
Education		
Less than High School	50.8	45.2-56.5
High School	42.1	38.7-45.6
Some college/college grad	31.3	28.7-33.9
Income		
<\$15,000	55.2	49.3-61.1
\$15-24,999	43.3	38.7-47.9
\$25-34,999	40.1	35.2-44.9
\$35-49,999	30.0	25.5-34.5
\$50-74,999	30.2	25.2-35.1
\$75,000+	30.1	24.2-35.9



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

A section on arthritis was included in the state-added questions regarding knowledge of arthritis as a serious condition and treatments available as well as resources in the community for arthritis-related information (Table 8.2). An estimated 90.8% reported that they did think arthritis is a very or somewhat serious illness. Only 23.2% reported that there were no effective treatments for arthritis and only 16.3% were aware of a Regional Arthritis Center in their area.

**Table 8.2. Weighted prevalence of knowledge and awareness of arthritis and resources available in Missouri, BRFSS 2001**

<b>State-Added Arthritis Questions, BRFSS 2001</b>		
<b>BRFSS Question</b>	<b>Prevalence (%)</b>	<b>95% CI</b>
Do you think arthritis is a very or somewhat serious illness?	90.8	89.5-92.0
Do you agree there are no effective treatments for arthritis?	23.2	21.3-25.1
Is there a Regional Arthritis Center in the area?	16.3	14.7-17.8

When seeking information on arthritis, the majority of the respondents reported a health service as their primary source of information. Media was second in line, followed by a personal contact.

**Table 8.3. Weighted prevalence of the preferred source for arthritis information in Missouri, BRFSS 2001**

<b>Where would you go for information on Arthritis?</b>		
<b>BRFSS Question</b>	<b>Prevalence (%)</b>	<b>95% CI</b>
Where is the first place to go to get more information on arthritis?		
Health Services*	78.0	76.2-79.8
Media**	16.2	14.5-17.8
Personal***	5.8	4.8-6.9
Is there another place to turn for arthritis information?		
Health Services	50.0	47.4-52.6
Media	38.6	36.1-41.2
Personal	11.4	9.6-13.1

\* Health Services refers to arthritis specialist (doctor), primary care doctor/other health professional, local health agency, Arthritis Foundation, or Regional Arthritis Center (RAC).

\*\* Media refers to health literature, newspaper, magazine, radio, TV, Internet, or library/book.

\*\*\* Personal refers to family member, friend/neighbor, or co-worker.

# ASTHMA

## Background

Asthma is a chronic inflammatory disease of the lungs affecting approximately 14.6 million adults in the United States. Although the causes of asthma are not completely understood, there are personal and environmental factors that can trigger its onset. These risk factors for asthma include family history, indoor and outdoor air pollutants (e.g., pollen, animal dander, chemicals, fumes, smoke, dust mites, and cockroaches), excessive exercise, obesity, or respiratory infections.<sup>x</sup> Symptoms of asthma include wheezing, breathlessness, coughing, and chest tightness.<sup>xi</sup>

Severe asthma attacks can result in frequent hospitalizations and emergency room visits. Proper medication and self-management of asthma could prevent asthma attacks from becoming too severe. “In 1998, asthma contributed to 13.9 million doctor visits, 2 million emergency room visits, and over 400,000 hospitalizations.”<sup>xii</sup> Hospitalization costs due to asthma account for more than \$50 million each year for Missouri.<sup>xiii</sup> Although this data is presented for adults 18 years and older, it is important to note that asthma is the number one cause of hospitalizations for children under the age of 15.<sup>xiv</sup>

To get more information on asthma and programs offered to address asthma in Missouri, please refer to <http://www.dhss.mo.gov/asthma/> and CDC’s website <http://www.cdc.gov/health/asthma.htm>.

## Asthma Results

### *Survey Questions:*

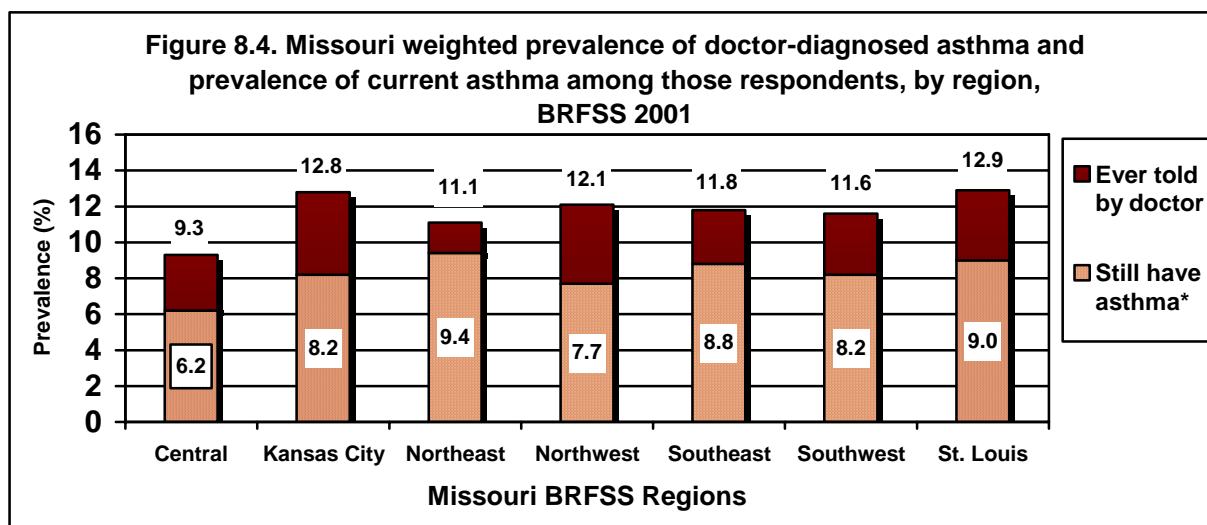
“Have you ever been told by a doctor, nurse, or other health professional that you had asthma?”

“Do you still have asthma?”

The prevalence of ever being diagnosed with asthma among Missouri adults is 12.0%. Geographically, in Figure 8.4, we see the highest prevalence occurring in Kansas City (12.8%) and St. Louis (12.9%). When delving further to see how many of those who had ever been diagnosed still have episodes of asthma, the Northeast region of Missouri is the highest at 9.4%.

Table 8.4 shows that females (12.7%) are more likely to have ever been diagnosed with asthma than males (11.4%). Blacks (20.4%) are almost twice as likely to have asthma than whites (11.5%). Low education and income level are also associated with a higher prevalence of asthma. Those age 18-24 years old (18.8%) are more likely to have asthma than the other age groups, followed by age group 35-44 years old with a prevalence of 14.4%.



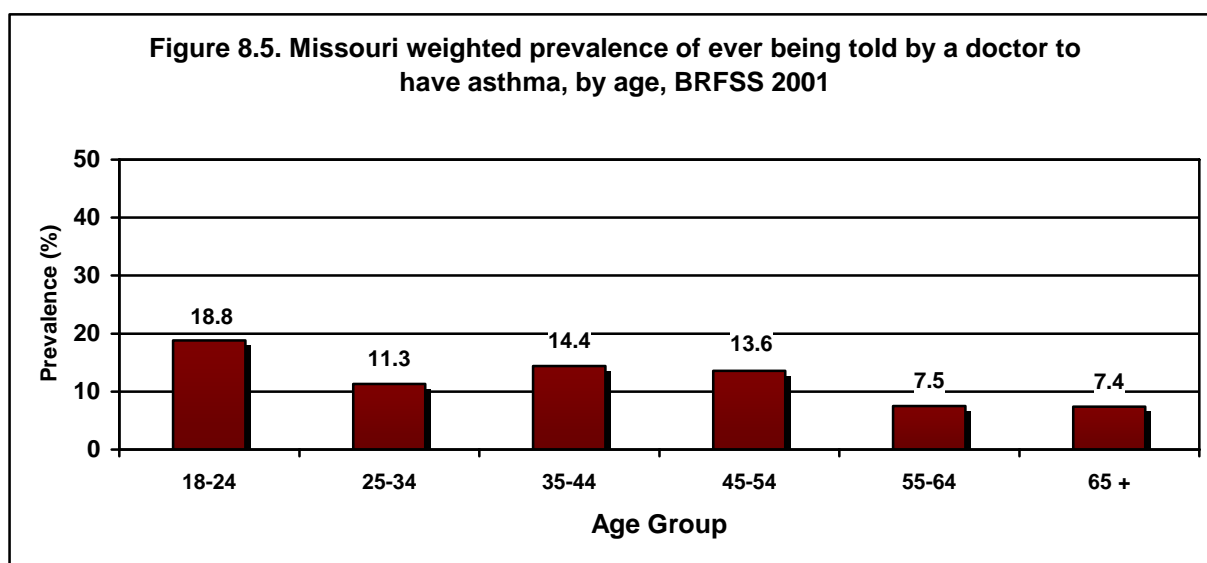


\* Asked to those who responded yes to ever been told by a doctor that they had asthma.

Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 8.4. Weighted prevalence of ever being told by a doctor to have asthma in Missouri, by socio-demographics, BRFSS 2001**

Demographic	Ever told by doctor to have asthma	
	Prevalence (%)	95% CI
Total	12.0	10.7-13.4
Gender		
Female	12.7	10.9-14.4
Male	11.4	9.2-13.5
Race		
Black	20.4	12.5-28.3
Other	8.4	3.7-13.0
White	11.5	10.1-12.9
Education		
Less than High School	15.5	11.5-19.5
High School	9.7	7.7-11.8
Some college/college grad	12.7	10.7-14.7
Income		
<\$15,000	15.6	11.0-20.1
\$15-24,999	14.1	10.8-17.5
\$25-34,999	13.9	10.2-17.7
\$35-49,999	9.8	6.8-12.8
\$50-74,999	10.3	7.0-13.7
\$75,000+	12.7	8.1-17.3



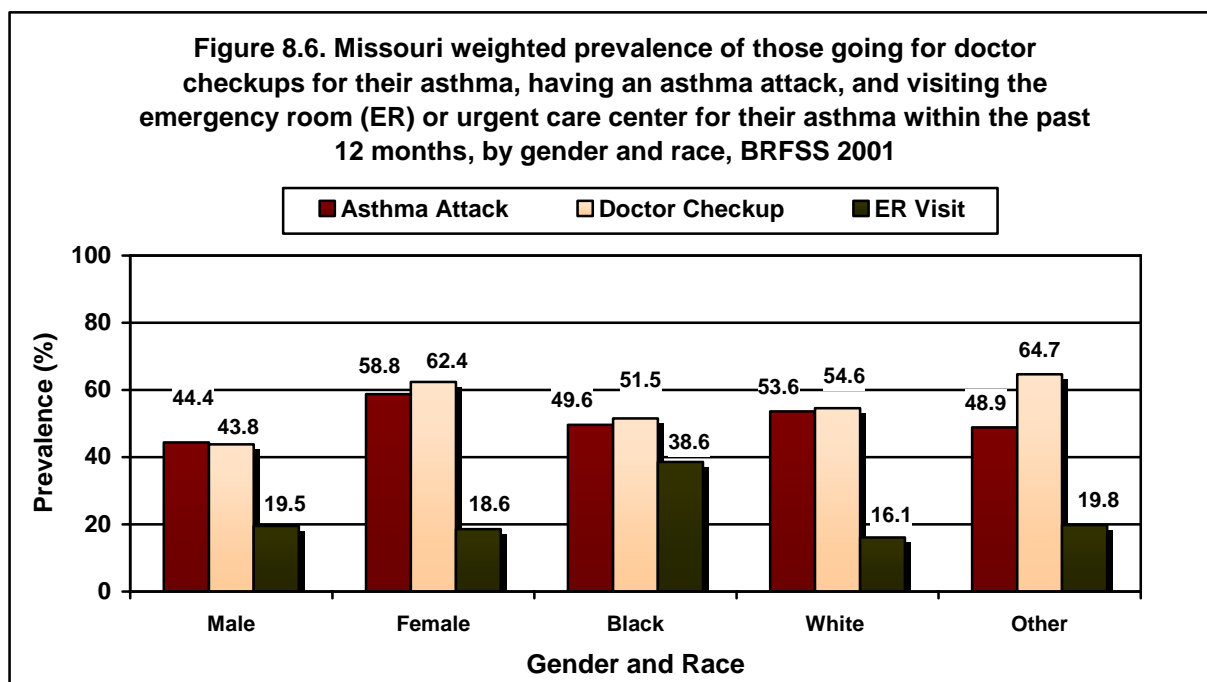
Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

The state-added module also consisted of asthma questions relating to an asthma attack and health care associated with an attack. Table 8.5 shows that 53% experienced an asthma attack within the past 12 months. An estimated 55% went to their doctor for an asthma checkup and nearly 19% had to visit an emergency room or other urgent care center for their asthma.

When looking at this data by gender and race in Figure 8.6, note that the prevalence of respondents going for a doctor's visit for asthma is comparable to the prevalence of an asthma attack. Women are more likely to have an asthma attack than men. Blacks (38.6%) are more likely to go the emergency room or urgent care center than are whites (16.1%) and other races (19.8%).

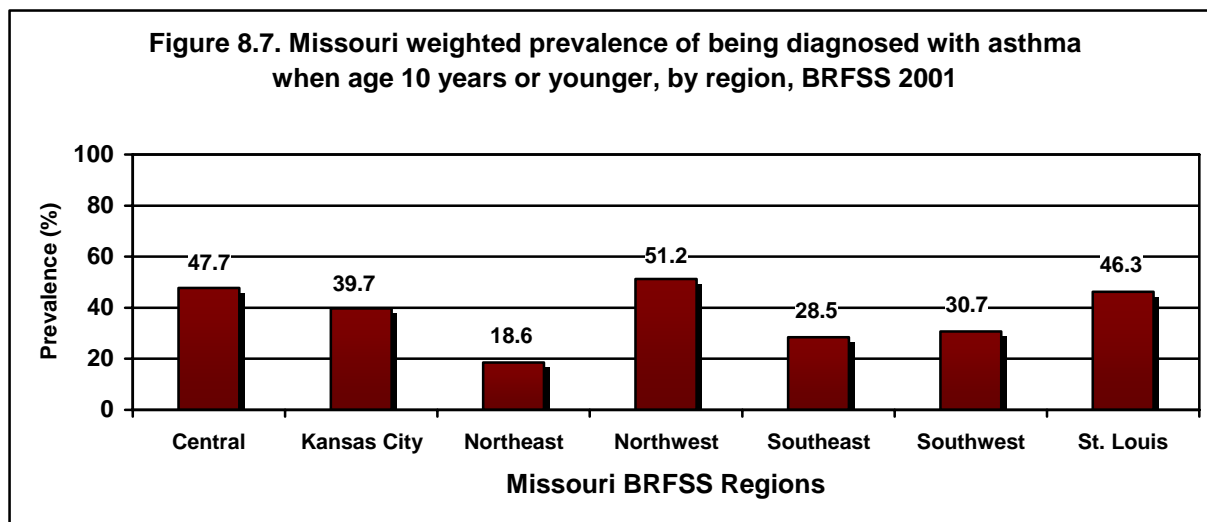
**Table 8.5. During the past 12 months, have you had an episode of asthma or an asthma attack?**

In the past 12 months, has the respondent...		
BRFSS Question	Prevalence (%)	95% CI
Had an asthma attack?	53.0	45.6-60.4
Seen a doctor for an asthma checkup?	54.9	47.4-62.3
Visited the emergency room or urgent care center for asthma?	18.9	13.1-24.8

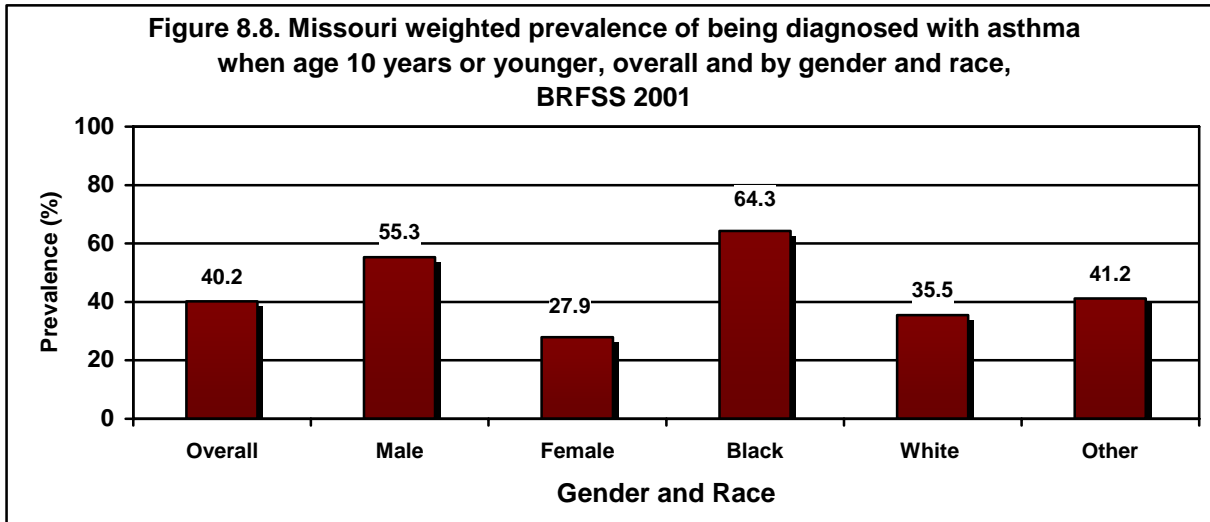


Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

Among those who have ever been diagnosed with asthma, a question regarding their age at the time of diagnosis was asked. The majority of those from the Northwest region, 47.7% from the Central region, and 46.3% from St. Louis were diagnosed at the age of 10 years or younger (Figure 8.7). Overall, 40% of those diagnosed with asthma were age 10 years or younger (Figure 8.8). Males (55.3%) and blacks (64.3%) were much more likely to have a diagnoses at 10 years of age or younger than females and whites or others, respectively.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

# CANCER (PROSTATE)

## Background

“Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. Prostate cancer is the most common type of cancer for men nationally and in Missouri other than skin cancer, and the second leading cause of cancer death in men after lung cancer. Age is the main risk factor for prostate cancer.”<sup>xv</sup>

## Prostate Cancer Results

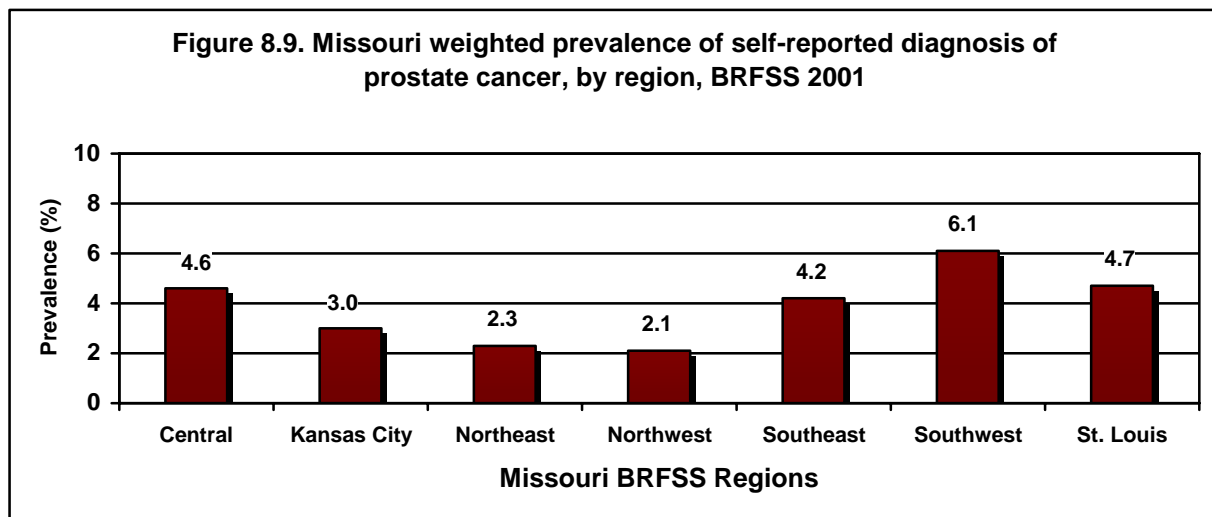
### *Survey Questions:*

“Have you ever been told by a doctor, nurse, or other health professional that you had prostate cancer?”

“Has your father, brother, son, or grandfather ever been told by a doctor, nurse, or health professional that he had prostate cancer?”

The overall prevalence of prostate cancer among Missouri men is 4.3%. Figure 8.9 demonstrates the regional variation in prevalence with the Southwest region having the highest prevalence of prostate cancer at 6.1%. The Northeast and Northwest have the lowest prevalence.

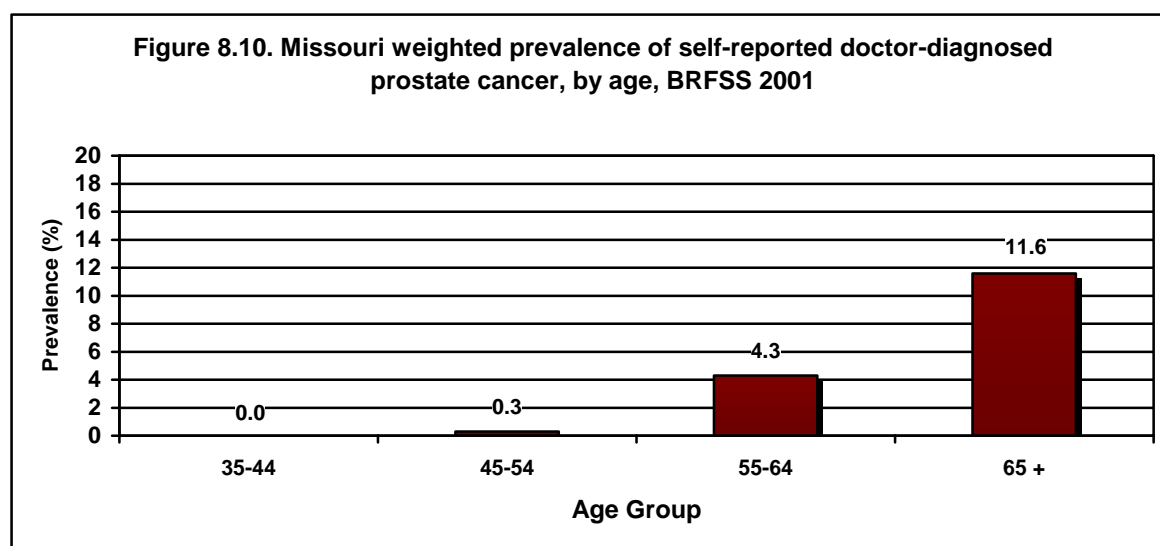
Table 8.6 shows that blacks are much more likely to be diagnosed with prostate cancer compared to whites. There was no distinct variation or trend by education level. For those in the \$15-24,999 income group, 8% were diagnosed with prostate cancer followed by 5.7% in the less than \$15,000 income group. There is an exponential increase in prevalence of prostate cancer with increasing age (Figure 8.10).



Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

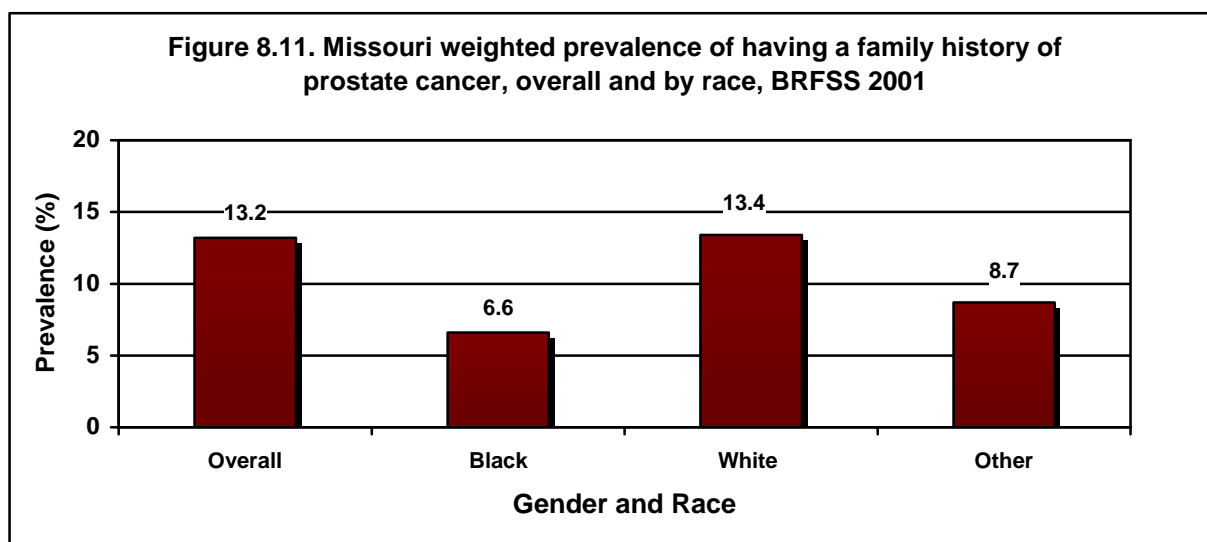
**Table 8.6. Weighted prevalence of ever diagnosed with prostate cancer in Missouri, by socio-demographics, BRFSS 2001**

Demographic	Prostate Cancer	
	Prevalence (%)	95% CI
Total (for males only)	4.3	2.7-5.9
Race		
Black	6.7	0.0-17.5
Other	0.0	0.0-0.0
White	4.3	2.7-6.0
Education		
Less than High School	5.0	1.0-9.0
High School	3.1	1.1-5.1
Some college/college grad	4.6	2.1-7.0
Income		
<\$15,000	5.7	0.3-11.0
\$15-24,999	8.0	3.2-12.9
\$25-34,999	4.1	0.0-9.4
\$35-49,999	4.3	0.3-8.3
\$50-74,999	1.8	0.0-4.0
\$75,000+	1.5	0.0-3.2



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

Family history was defined by whether the male respondent's father, brother, son, or grandfather has ever been diagnosed by a doctor, nurse, or health professional to have prostate cancer. Approximately 13.2% of the male respondents reported a history of prostate cancer in his family (Figure 8.10). Although the prevalence of being diagnosed with prostate cancer is greater in blacks, whites showed a much higher prevalence of a family member with prostate cancer than blacks or other race.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

For information on preventive screening practices in Missouri for prostate cancer, please refer the section on preventive screenings in Chapter 9.

# CARDIOVASCULAR DISEASE

## Background

Nearly 70 million Americans have a cardiovascular disease. Coronary heart disease is the leading cause of death among both men and women. In addition, stroke is the third leading cause of death. Overall, these conditions account for over 6 million hospitalizations each year and nearly 40% of all deaths in the United States. These conditions are more common in the older, 65 years and over, age group, but with an increasing mortality in the 15-34 age group.<sup>xvi</sup>

These conditions may be prevented with modification of two primary risk factors: high blood pressure and high blood cholesterol. Additionally, improvements in behaviors and conditions such as smoking, nutrition, physical activity, overweight/obesity, and diabetes management can greatly reduce the risk of cardiovascular disease and premature mortality.

To get more information on cardiovascular disease and programs offered to address cardiovascular disease in Missouri, please refer to <http://www.dhss.mo.gov/HeartDisease> and CDC's website <http://www.cdc.gov/cvh/>.

## Cardiovascular Disease Results

### **Survey Question:**

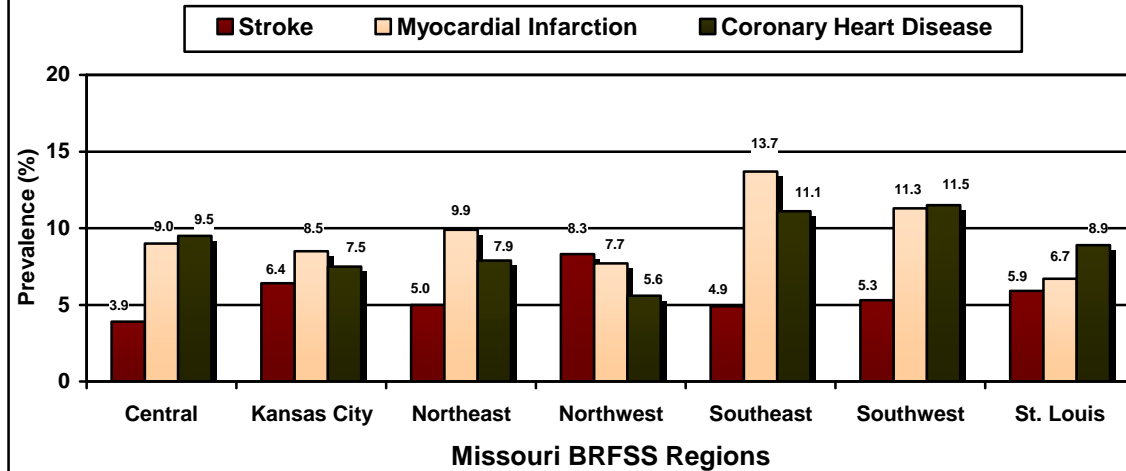
“Has a doctor, nurse, or other health professional ever told you that you had any of the following?”  
“A heart attack, also called a myocardial infarction”  
“Angina or coronary heart disease”  
“A stroke”

In 2001, 5.6% of adult Missourians reported being diagnosed by a doctor, nurse or other health professional to have stroke, 9% were diagnosed with myocardial infarction and 9.1% diagnosed with coronary heart disease. Figure 8.11 illustrates the geographic distribution of cardiovascular disease in Missouri. Stroke prevalence ranges from 3.9 to 8.3% across the regions. The Northeast has the highest prevalence of stroke. Myocardial infarction was highest in the Southeast region with a prevalence of 13.7%. Coronary heart disease was more likely to occur in the southern part of the state than the other regions with 11-12% prevalence in the Southeast and Southwest regions.

Distribution by socio-demographic factors in Table 8.7 reveal that while stroke prevalence was similar among men and women, men had a 50% greater likelihood of having myocardial infarction and coronary heart disease. Those with less than a high school education showed a much higher prevalence of these conditions. A notable increasing trend for these cardiovascular conditions exist for decreasing levels of income. Those with the less than \$15,000 income were more likely to have stroke (15.2%), myocardial infarction (17.1%) and coronary heart disease (17.2%) than the other income levels. Figure 8.12 also presents an increasing prevalence of these conditions by increasing age.



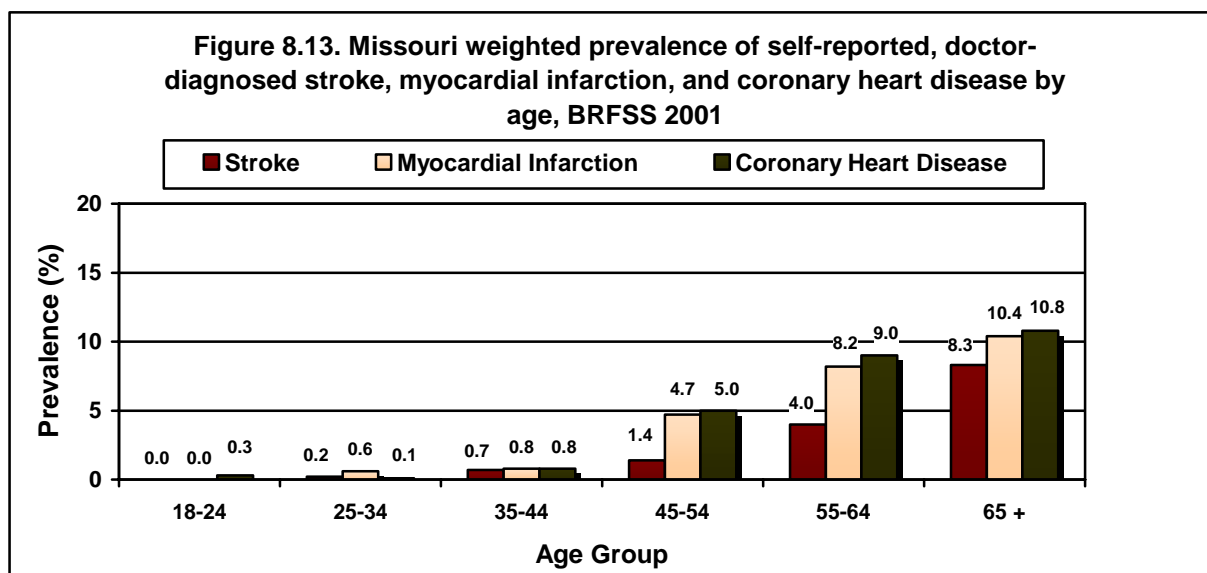
**Figure 8.12. Missouri weighted prevalence of self-reported, doctor-diagnosed stroke, myocardial infarction, and coronary heart disease, by region, BRFSS 2001**



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 8.7. Missouri weighted prevalence of self-reported, doctor-diagnosed stroke, myocardial infarction, and coronary heart disease, by socio-demographics, BRFSS 2001**

Demographic	Stroke		Myocardial Infarction		Coronary Heart Disease	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	5.6	4.1-7.1	9.0	7.3-10.7	9.1	7.3-11.0
Gender						
Female	5.8	4.0-7.6	5.9	4.4-7.5	6.2	4.7-7.8
Male	5.5	2.9-8.0	12.8	9.5-16.1	12.8	9.2-16.5
Race						
Black	5.3	0.0-10.6	13.7	1.7-25.7	10.3	0.0-20.6
Other	5.7	0.0-13.6	11.0	2.2-19.9	10.9	1.1-20.6
White	5.7	4.0-7.3	8.7	6.9-10.4	8.9	6.9-10.8
Education						
< High School	10.7	6.6-14.8	16.6	11.8-21.5	14.7	10.1-19.3
High School	6.2	3.2-9.2	8.0	5.1-11.0	8.0	4.9-11.1
> High School	3.3	1.7-4.9	6.8	4.7-9.0	8.2	5.5-10.9
Income						
<\$15,000	15.2	9.8-20.5	17.1	11.4-22.7	17.2	11.9-22.6
\$15-24,999	5.0	2.2-7.9	11.4	7.8-15.1	11.6	7.6-15.7
\$25-34,999	5.6	1.9-9.2	8.1	3.8-12.3	9.3	4.5-14.0
\$35-49,999	5.2	0.7-9.6	6.1	2.0-10.3	9.2	3.1-15.3
\$50-74,999	1.9	0.0-4.3	5.3	1.0-9.6	5.0	0.7-9.2
\$75,000+	0.1	0.0-0.2	1.7	0.0-3.9	0.8	0.0-2.3



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

Approximately 70-80% of respondents reported eating fewer high fat or high-cholesterol foods and eating more fruits and vegetables (Table 8.8). An estimated 61.8% were engaging in more physical activity.

**Table 8.8. Missouri weighted prevalence of changing nutrition and physical activity behaviors to lower risk of heart disease or stroke, BRFSS 2001**

To lower your risk of developing heart disease or stroke, are you....		
BRFSS Question	Prevalence (%)	95% CI
Eating fewer high fat or high cholesterol foods?	69.8	66.9-72.7
Eating more fruits and vegetables?	81.0	78.6-83.5
More physically active?	61.8	58.8-64.8

# DIABETES

## Background

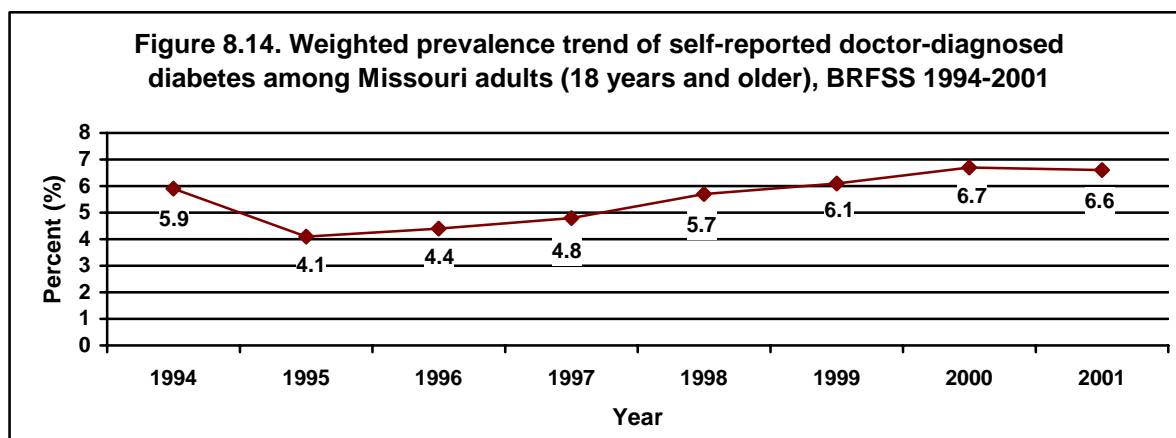
Diabetes is a disease characterized by high levels of blood glucose resulting from the lack of sufficient insulin production or the inability of the body to use it. Diabetes affects nearly 18 million people in the United States, comprising 13 million diagnosed and 5 million undiagnosed people.<sup>xvii</sup>

There are different types of diabetes.

- Type-1 diabetes usually affects children or young adults and accounts for 5-10% of diagnosed diabetes.
- Type-2 diabetes is typically an adult-onset diabetes, but is now becoming a condition that affects children and adolescents, being linked to the obesity epidemic. Type 2 accounts for 90-95% of diagnosed diabetes and is more prevalent in older adults, individuals with a family history of diabetes or gestational diabetes, obese individuals, blacks and other races.
- Gestational diabetes is a form of glucose intolerance that only develops in women during pregnancy. It develops in approximately 2-5% of all pregnancies and typically subsides after the pregnancy.<sup>xviii</sup> It is estimated that 5-10% of women with gestational diabetes may develop Type 2 diabetes.<sup>xix</sup>

*(Note: For the purposes of our analysis, we designated those reporting gestational diabetes in the category of “no diabetes”).*

Diabetes prevalence among adult Missourians appears to be on an incline up to 6.6% in 2001 (Figure 8.13).



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1994-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

For more information on diabetes and programs offered to address diabetes in Missouri, please refer to <http://www.dhss.mo.gov/diabetes/index.html> and CDC's website <http://www.cdc.gov/diabetes/index.htm>.

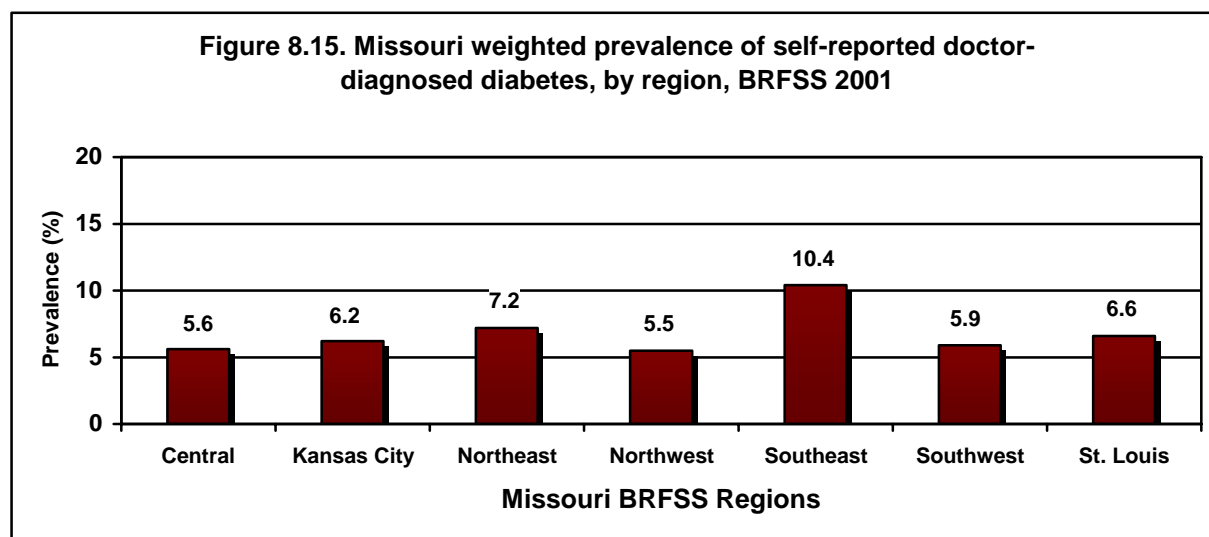
## Diabetes Results

### *Survey Question:*

"Have you ever been told by a doctor that you have diabetes?"

An overall 6.6% of adult Missourians are afflicted with diabetes. The regional distribution of diabetes in Missouri clearly demonstrates that the Southeast region has a dramatically higher prevalence of 10.4% compared to all the other regions (Figure 8.14).

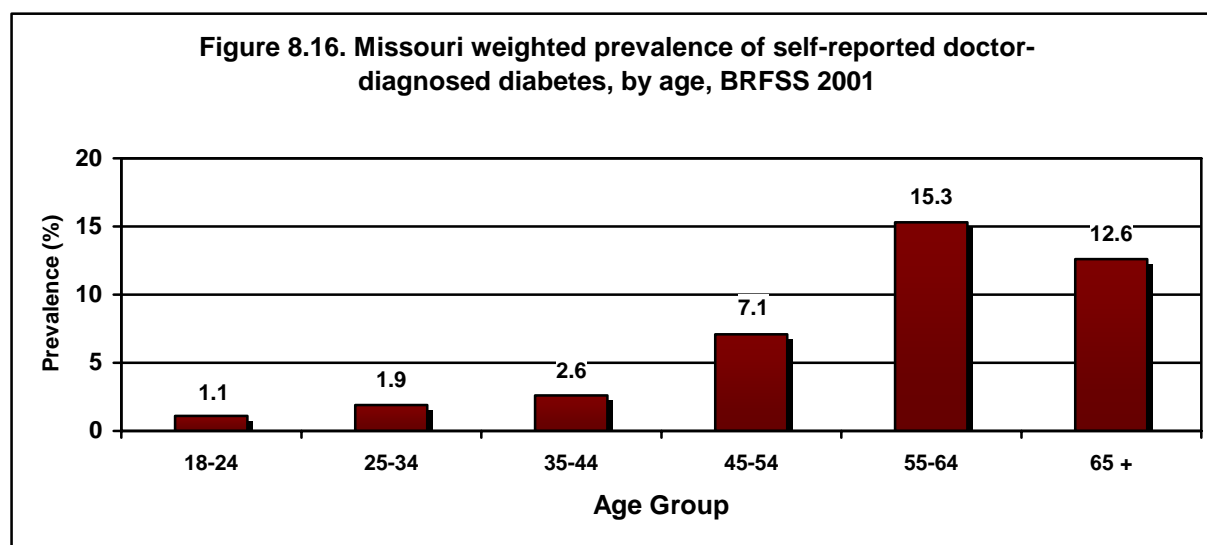
Table 8.9 shows that diabetes prevalence is correlated with education level. Those with a less than high school education have a prevalence of 9.8% compared to 5.1% among those with some college experience or who are college graduates. Income level also exhibits a strong relationship with diabetes prevalence. Those with an income of less than \$15,000 have a prevalence of 12.5% compared to a 1.4% among those with an income of \$75,000 or greater. When breaking down by age groups, there is an increasing trend with increasing age, however the 55-64 has the highest prevalence of 15.3% (Figure 8.15).



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 8.9. Weighted prevalence of self-reported doctor-diagnosed diabetes in Missouri by socio-demographics, BRFSS 2001**

Demographic	Self-reported Doctor-diagnosed Diabetes	
	Prevalence (%)	95% CI
Total	6.6	5.6-7.6
Gender		
Female	6.3	5.1-7.6
Male	7.0	5.3-8.6
Race		
Black	7.6	3.4-11.7
Other	8.2	3.0-13.5
White	6.4	5.4-7.5
Education		
Less than High School	9.8	7.1-12.4
High School	7.8	5.8-9.8
Some college/college grad	5.1	3.9-6.4
Income		
<\$15,000	12.5	9.3-15.8
\$15-24,999	9.9	7.2-12.7
\$25-34,999	6.5	3.9-9.2
\$35-49,999	5.6	2.8-8.3
\$50-74,999	4.8	2.4-7.2
\$75,000+	1.4	0.2-2.5



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

## 9 BEHAVIORAL RISK FACTORS

### OVERWEIGHT AND OBESITY

#### Background

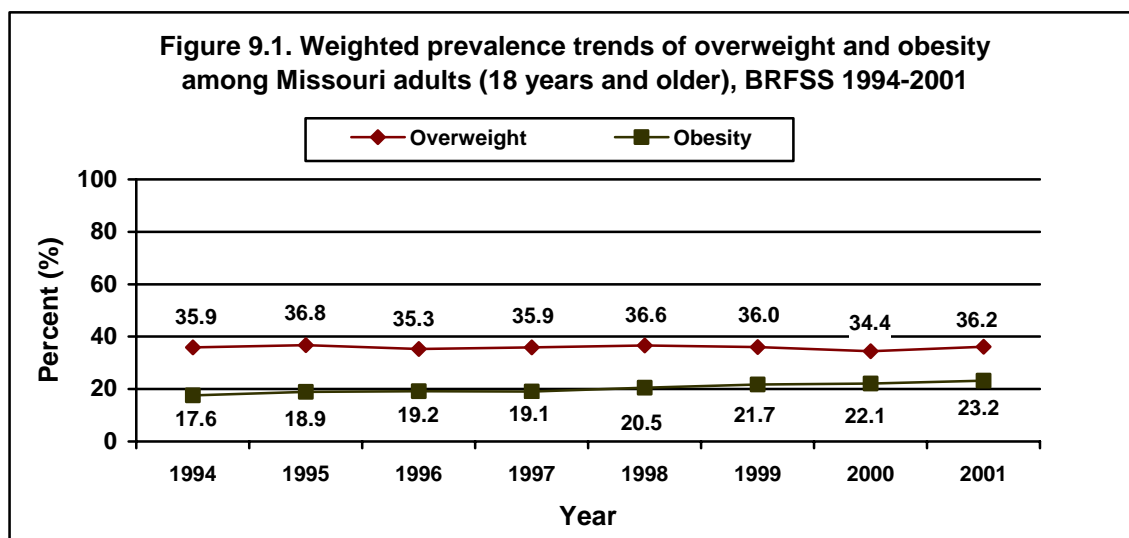
More than 60 million Americans are obese – more than 1 in 3 of all adults and 1 in 5 of children. In the U.S., the changes in obesity prevalence during the past decade have been dramatic. Transcending racial, gender, socio-economic, and geographic boundaries, obesity affects nearly all states and all populations. Missouri trends of overweight and obesity from 1994 to 2001 shown in Figure 9.1 illustrate a rather steady trend in overweight while obesity prevalence is on a steady incline.

#### Medical Conditions Associated with Obesity<sup>xx</sup>

Arthritis and Osteoporosis	Hypertension
Birth Defects	Impaired Immune Response
Breast Cancer	Impaired Respiratory Function
Cancers of the Esophagus and Gastric Cardia	Infertility
Colorectal Cancer	Liver Disease
Endometrial Cancer	Obstetric and Gynecological Complications
Renal Cell Cancer	Sever Acute Biliary & Alcoholic Pancreatitis
Cardiovascular Disease	Sleep Apnea and Daytime Sleepiness
Chronic Venous Insufficiency	Stroke
Deep Vein Thrombosis	Type 2 Diabetes
End Stage Renal Disease	Urinary Stress Incontinence
Gallbladder Disease	

Body Mass Index (BMI) is calculated using self-reported weight and height measurements and is used to determine weight status for adults.

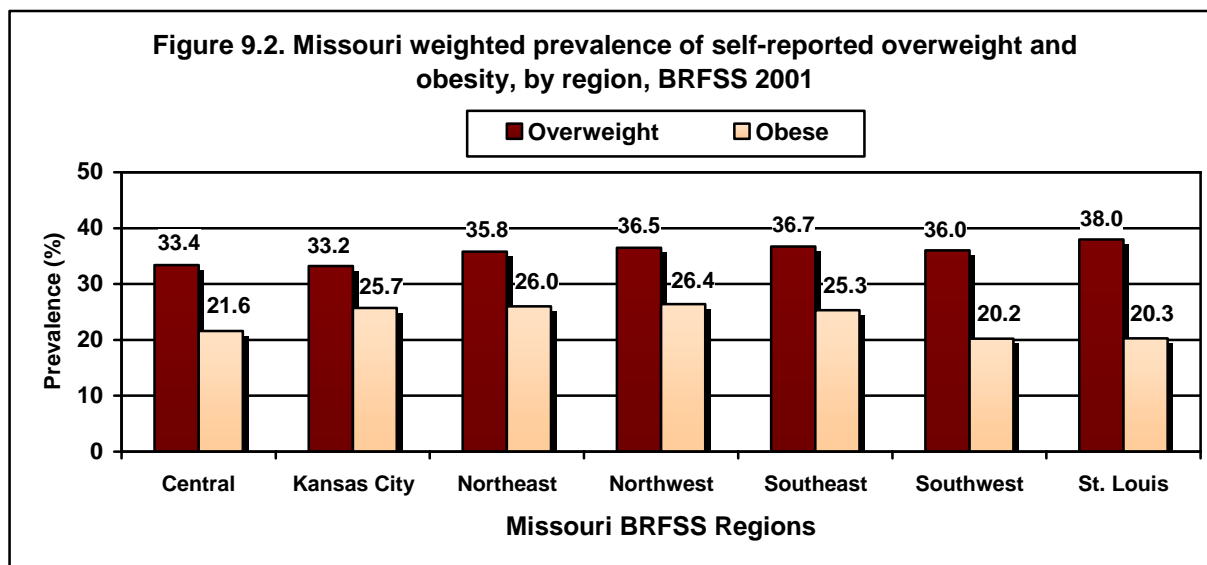
- Underweight – BMI below 18.5 kg/m<sup>2</sup>
- Healthy weight – BMI between 18.5 to 24.9 kg/m<sup>2</sup>
- Overweight – BMI between 25-29.9 kg/m<sup>2</sup>
- Obese – BMI of 30 kg/m<sup>2</sup> or higher



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1994-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

## Overweight and Obesity Results

Approximately 36% of Missouri's adult population is overweight and an additional 22.5% are obese. Figure 9.2 shows that across the regions of Missouri, there is little variation in overweight or obesity prevalence. Combined overweight and obesity shows a range from 55% (Central) to 62.9% (Northwest).



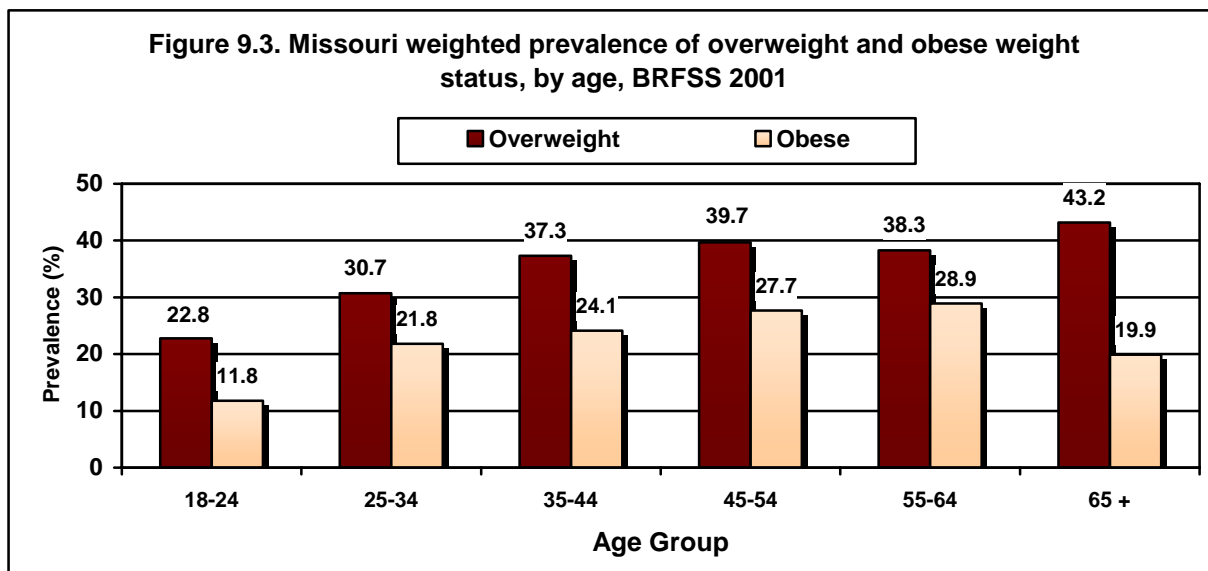
Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

Overweight and obesity are more prevalent among men than women and the difference in prevalence is significantly greater for overweight (Table 9.1). Racial differences were evident for obese individuals. Blacks had a higher prevalence of obesity (34.4%) than whites (21.7%) and other races (18.9%). Those with less than a high school education were more likely to be obese (27.6%) than those with more than a high school education (21.2%). The relationship between income level and overweight showed no apparent trend, but the highest prevalence was in the higher income brackets. On the contrary, obesity did reveal a trend with the highest prevalence of 28.8% in the lowest income bracket of less than \$15,000. Figure 9.3 demonstrates overweight and obesity by age groups and shows an increasing trend with age for overweight, but not so much for obesity with the highest prevalence among those 55-64 years of age (28.9%).

**Table 9.1. Weighted prevalence of self-reported overweight and obesity in Missouri, by socio-demographics, BRFSS 2001**

Demographic	Overweight		Obese	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	36.0	33.9-38.0	22.5	20.7-24.2
Gender				
Female	27.5	25.1-29.8	20.6	18.5-22.8
Male	44.8	41.5-48.0	24.4	21.7-27.1
Race				
Black	35.1	26.2-44.1	34.4	25.9-42.8
Other	31.4	21.6-41.3	18.9	10.6-27.1
White	36.0	33.8-38.2	21.7	19.9-23.5
Education				
< High School	34.2	28.4-40.0	27.6	22.6-32.6
High School	37.0	33.5-40.6	22.8	19.9-25.8
> High School	35.8	33.0-38.7	21.2	18.8-23.5
Income				
<\$15,000	27.2	21.8-32.7	28.8	23.3-34.4
\$15-24,999	35.3	30.5-40.2	24.5	20.5-28.6
\$25-34,999	35.0	30.3-39.8	24.9	20.5-29.4
\$35-49,999	40.0	35.0-45.0	22.0	17.8-26.2
\$50-74,999	36.9	31.3-42.5	22.2	17.6-26.8
\$75,000+	39.5	33.1-45.8	18.6	13.5-23.8





Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

# PHYSICAL ACTIVITY

## Background

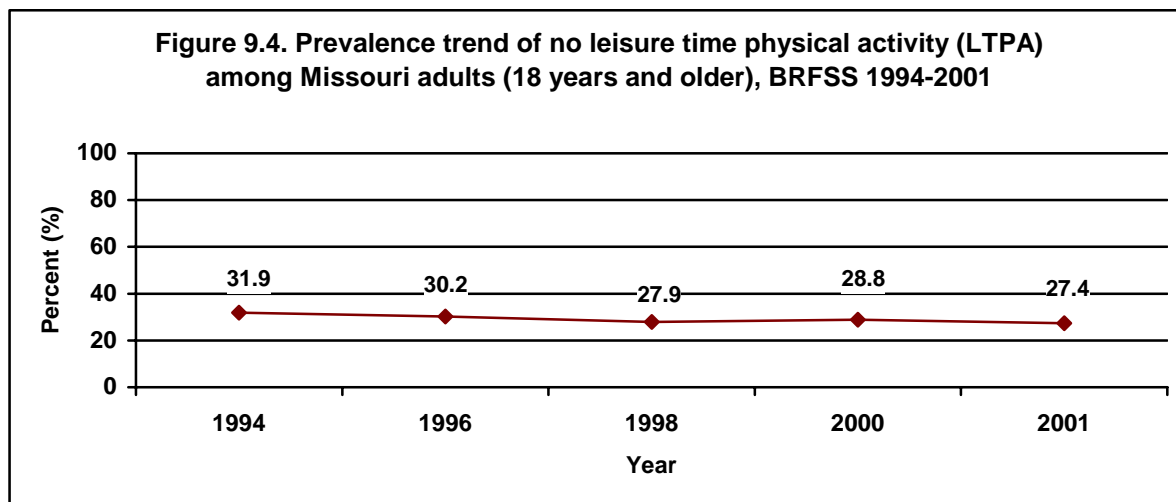
Being physically active may reduce the risk of premature death by 20-30% and the risk of developing major chronic diseases such as coronary heart disease, stroke, diabetes, and cancers by 30-50%.<sup>xxi</sup> In addition to these benefits, physical activity can help build muscles and stamina, reduce and control weight, relieve pain from arthritis, and reduce symptoms of depression. However, despite these benefits of physical activity, more than 50% of American adults do not get enough physical activity and 25% of adults are not active at all in their leisure time.<sup>xxii</sup> Although 27.4% of Missouri adults are not participating in any leisure-time physical activity, the prevalence is going down from the 1994 prevalence of 31.9% (Figure 9.4).

Physical activity recommendations for adults:

- Moderate leisure-time physical activity – for at least 30 minutes on 5 or more days of the week<sup>xxiii</sup>

OR

- Vigorous leisure-time physical activity – for 20 or more minutes on 3 or more days of the week<sup>xxiv</sup>



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1994-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

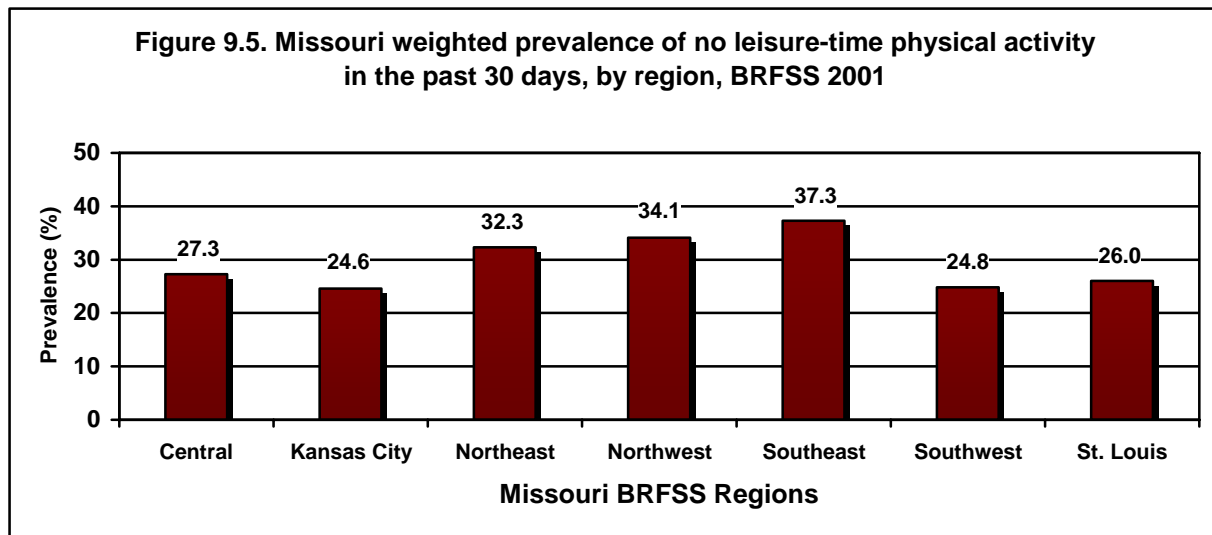
## Physical Inactivity Results

### *Survey Question:*

“During the past 30 days, other than your regular job, did you participate in any physical activities or exercise such as running, calisthenics, golf, gardening, or walking for exercise?”

Based on the definition of moderate and vigorous leisure-time physical activity, 39.6% of Missouri adults were engaging in moderate physical activity while 20.8% were engaging in vigorous physical activity within the past 30 days. An estimated 27.4% were not involved in any leisure-time physical activity within the past 30 days.

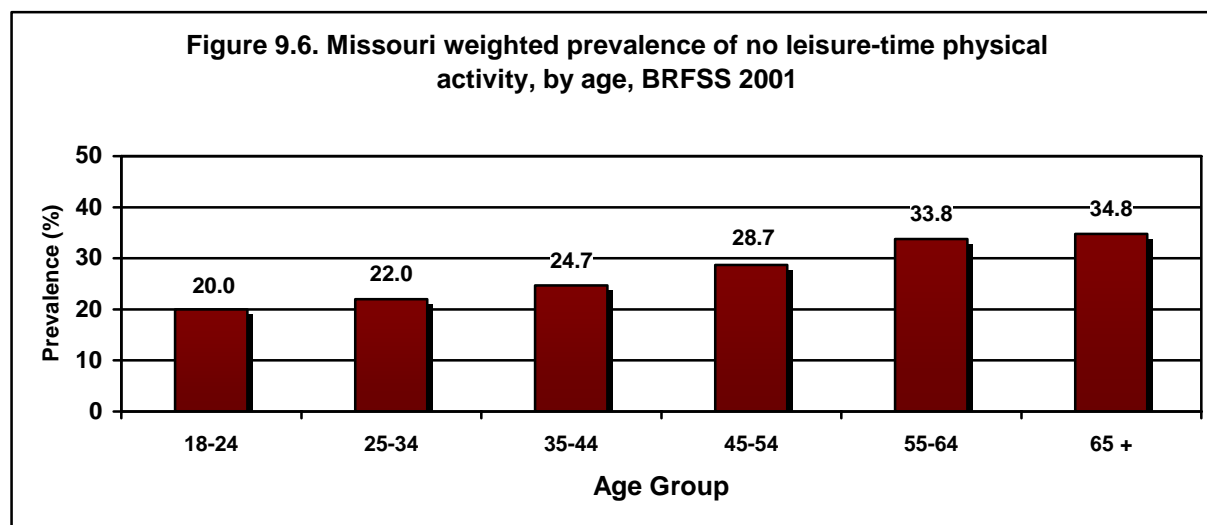
Geographically, Figure 9.5 shows that the Southeast had the highest prevalence of no leisure-time physical activity (37.3%). Leisure-time physical activity decreases with age and is less common among women than men and among those with lower income and less education (Table 9.2 and Figure 9.6).



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 9.2. Missouri weighted prevalence of no leisure-time physical activity in the past 30 days, by socio-demographics, BRFSS 2001**

Demographic	No leisure-time physical activity in past 30 days	
	Prevalence (%)	95% CI
Total	27.4	25.6-29.2
Gender		
Female	30.3	27.9-32.7
Male	24.3	21.6-27.0
Race		
Black	38.3	29.7-47.0
Other	33.3	23.4-43.3
White	26.4	24.6-28.3
Education		
Less than High School	47.0	41.4-52.7
High School	31.9	28.7-35.1
Some college/college grad	20.0	17.8-22.3
Income		
<\$15,000	36.7	31.1-42.2
\$15-24,999	40.2	35.5-45.0
\$25-34,999	31.8	27.1-36.4
\$35-49,999	25.2	21.0-29.4
\$50-74,999	20.3	16.0-24.5
\$75,000+	11.0	7.3-14.7



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

# TOBACCO USE AND POLICIES

## Background

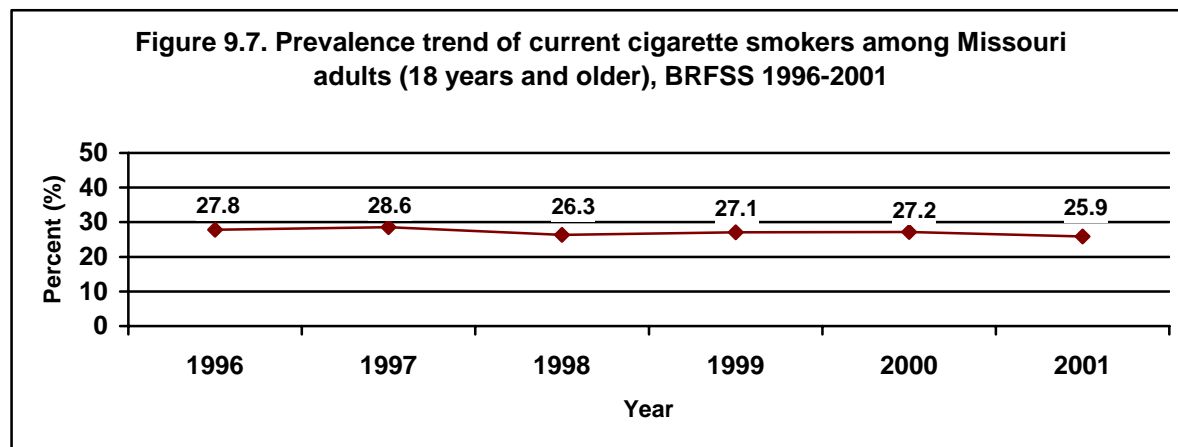
Cigarette smoking remains the leading preventable cause of death in the United States, accounting for approximately 1 of every 5 deaths (440,000 people) each year.<sup>xxv,xxvi</sup> An estimated, 22.5% of all adults (46 million people) smoke cigarettes in the United States.<sup>xxvii</sup>

(Source: [http://www.cdc.gov/tobacco/factsheets/AdultCigaretteSmoking\\_FactSheet.htm](http://www.cdc.gov/tobacco/factsheets/AdultCigaretteSmoking_FactSheet.htm))

In 2000, 27.2% of Missouri adults were current smokers, placing Missouri as the 3rd highest prevalence among all the states. In 2000, nearly 10,000 Missourians died from tobacco-related diseases, primarily from cardiovascular and respiratory illnesses. Smoking during pregnancy caused 26 infants deaths.<sup>xxviii</sup> An estimated 1,200 deaths annually occur from secondhand smoke.<sup>xxix</sup> Over the past decade, from 1991 to 2001, the prevalence of current cigarette smokers among Missouri adults appears to be on a decline from 27.8% to 25.9% (Figure 9.7).

Smoking was responsible for more deaths in 2000 than all the following combined:<sup>xxx</sup>

- Unintentional injuries
- Influenza and Pneumonia
- Diabetes
- Alzheimer's
- Suicide
- Liver Disease
- AIDS



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1996-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

## Tobacco Results

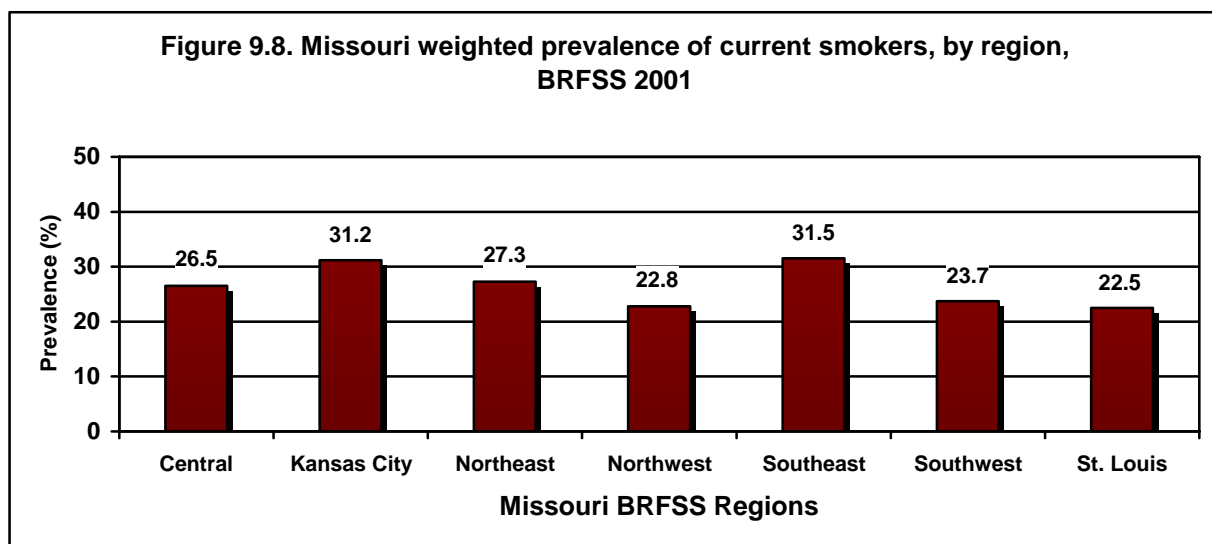
### *Survey Questions:*

“Have you smoked at least 100 cigarettes in your entire life?”

“Do you now smoke cigarettes every day, some days, or not at all?”

“During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?”

In 2001, 25.9% of Missouri adults reported being current cigarette smokers. Rates of current smoking were highest in the Southeast (31.5%) and Kansas City (31.2%) and lowest in St. Louis (22.5%) and the Northwest (22.8%) regions (Figure 9.8). Men (27.6%) and those with lower levels of education and income were more likely to be current smokers than were women (24.4%) and those with higher levels of education and income (Table 9.3). Figure 9.9 shows that those 18 to 24 years of age (35.7%) were more likely to be current smokers than the older age groups.

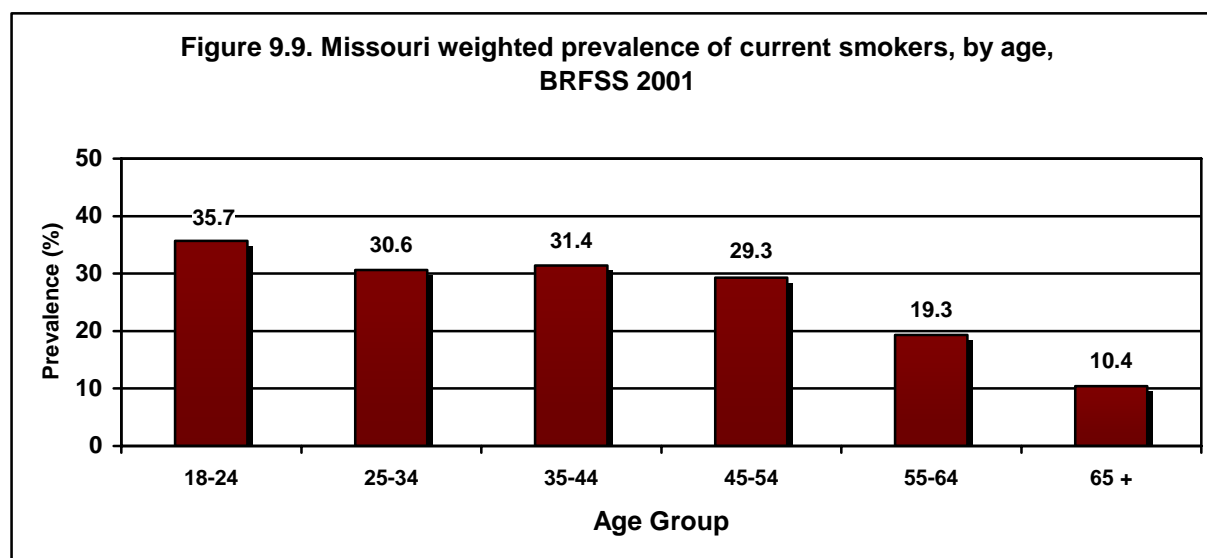


Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 9.3. Missouri weighted prevalence of current smokers, by socio-demographics, BRFSS 2001**

Demographic	Current Smokers	
	Prevalence (%)	95% CI
Total	25.9	24.1-27.7
Gender		
Female	24.4	22.2-26.6
Male	27.6	24.8-30.4
Race		
Black	23.9	16.3-31.4
Other	32.3	22.5-42.1
White	25.4	23.6-27.3
Education		
Less than High School	34.8	29.3-40.3
High School	29.9	26.8-33.1
Some college/college grad	21.4	19.1-23.7
Income		
<\$15,000	29.5	24.2-34.8
\$15-24,999	35.5	30.9-40.1
\$25-34,999	29.2	24.8-33.7
\$35-49,999	27.1	22.8-31.5
\$50-74,999	21.9	17.3-26.6
\$75,000+	16.6	12.2-21.0

Seventy percent of smokers were advised to quit smoking and 54% attempted to quit smoking (Table 9.4). Whites (72.6%) were more likely to be advised by a doctor to quit smoking than blacks (50.5%) and other races (52.1%), but whites (53.2%) were less likely to attempt to quit smoking than blacks (58.5%) and other races (75.6%). Those with lower education were more likely to be advised by a doctor to quit smoking.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 9.4. Missouri weighted prevalence of receiving doctor's advice in the past 12 months to quit smoking and attempting to quit smoking, by socio-demographics, BRFSS 2001**

Demographic	Advised by doctor in Past year to quit smoking		Attempted to quit smoking	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	69.8	65.4-74.2	53.8	49.8-57.7
Gender				
Female	71.4	66.2-76.6	53.4	48.1-58.6
Male	67.5	59.9-75.0	54.2	48.3-60.1
Race				
Black	50.5	32.7-68.3	58.5	39.3-77.7
Other	52.1	28.7-75.4	75.6	61.9-89.2
White	72.6	68.3-77.0	53.2	49.0-57.3
Education				
< High School	76.8	68.2-85.5	55.1	45.0-65.1
High School	70.7	63.7-77.7	54.2	48.2-60.3
> High School	66.6	59.8-73.4	53.0	47.0-59.1
Income				
<\$15,000	74.0	62.2-85.8	60.4	50.2-70.5
\$15-24,999	68.4	60.0-76.8	57.0	48.6-65.4
\$25-34,999	75.7	66.4-84.9	46.7	37.9-55.6
\$35-49,999	62.9	51.4-74.3	58.0	48.7-67.3
\$50-74,999	75.9	63.6-88.1	53.6	41.5-65.7
\$75,000+	63.9	48.1-79.7	46.2	31.9-60.5



# HYPERTENSION (HIGH BLOOD PRESSURE)

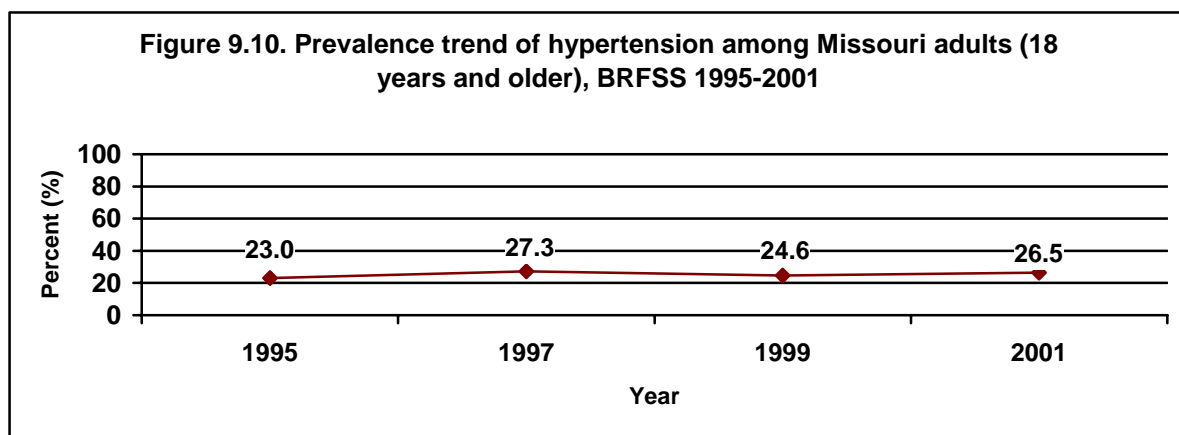
## Background

High blood pressure (hypertension) affects nearly 1 in 3 American adults, being more prevalent in blacks, then Hispanics and Native Americans and then Asians.<sup>xxxi</sup> High blood pressure is a major risk factor for chronic conditions, such as heart disease, stroke and diabetes. Therefore, early detection, treatment and control are essential.

Blood pressure measurements include the systolic number and diastolic number. The systolic number represents the pressure while the heart is beating. The diastolic number represents the pressure when the heart is resting between beats.

- Normal blood pressure: systolic blood pressure less than 120 and a diastolic blood pressure less than 80.
- Pre-hypertension: systolic blood pressure from 120–139 mmHg or a diastolic blood pressure of 80–89 mmHg.
- High blood pressure for adults: systolic pressure of 140 mmHg or higher, or a diastolic pressure of 90 mmHg or higher.

Among people with high blood pressure, 31.6% do not even know they have it. Prevention or management of high blood pressure can be achieved by reducing excess weight, participating in physical activities, controlling salt intake, increasing potassium consumption, not drinking alcohol excessively, to quit smoking, and to take the prescribed medication. It is recommended that hypertension screening be conducted on a regular basis.



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1995-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

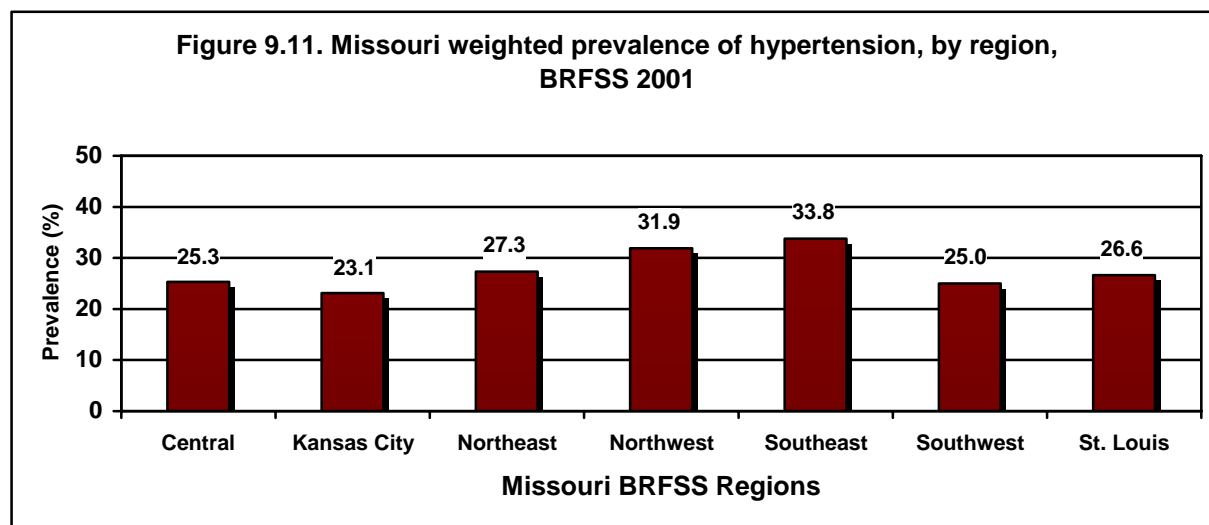
## Hypertension Results

### *Survey Question:*

“Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?”

Over 74% of the respondents have had a hypertension screening and 26% of adult Missourians have hypertension. Figure 9.11 shows the highest prevalence of hypertension is in the Southeast region (33.8%) and the lowest prevalence in Kansas City (23.1%).

Men and women have the same prevalence of hypertension (Table 9.5). Blacks (31.6%) are more likely than whites (26.4%) and other races (22.4%) to have hypertension. Lower education levels are associated with higher prevalence of hypertension. Those with less than a high school education (36.3%) are more likely to have hypertension than those with some college or a college degree (21.5%). Those with a lower income level also have higher prevalence.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 9.5. Weighted prevalence of self-reported, doctor-diagnosed hypertension in Missouri, by socio-demographics, BRFSS 2001**

Demographic	Hypertension	
	Prevalence (%)	95% CI
Total	26.5	24.7-28.3
Gender		
Female	26.7	24.5-29.0
Male	26.3	23.4-29.2
Race		
Black	31.6	23.8-39.3
Other	22.4	13.4-31.4
White	26.4	24.5-28.3
Education		
Less than High School	36.3	31.1-41.5
High School	30.8	27.6-34.1
Some college/college grad	21.5	19.2-23.9
Income		
<\$15,000	43.6	37.6-49.5
\$15-24,999	34.1	29.6-38.5
\$25-34,999	26.3	22.0-30.6
\$35-49,999	20.5	16.4-24.5
\$50-74,999	18.0	13.8-22.1
\$75,000+	20.1	14.7-25.5

# HIGH BLOOD CHOLESTEROL

## Background

Nearly 107 million American adults have total blood cholesterol levels of 200 milligrams per deciliter (mg/dL) and higher, which is greater than the recommended levels. Among those with high blood cholesterol levels, an estimated 38 million are considered at high risk with levels of 240 mg/dL or higher.<sup>xxxiii</sup>

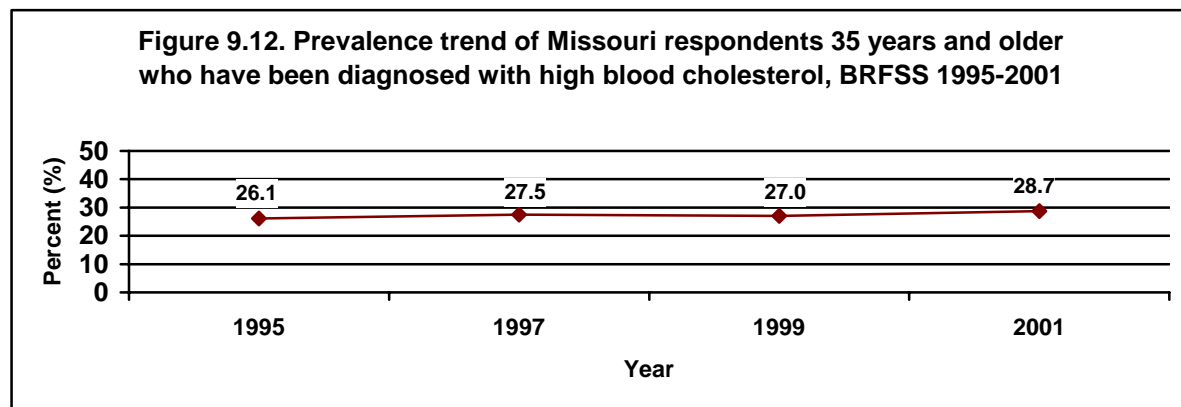
High blood cholesterol is a major risk factor for heart disease, which is the number one killer in the United States and Missouri. There are two types of cholesterol, the High Density Lipoprotein (HDL) considered to be the “good” cholesterol and the Low Density Lipoprotein (LDL) labeled as the “bad” cholesterol.

There are no symptoms of high cholesterol, but a cholesterol check is recommended at least once every 5 years for individuals aged 20 and older. Recommended levels of cholesterol are as follows:<sup>xxxiii</sup>

- Total cholesterol: Less than 200 mg/dL
- LDL: Less than 100 mg/dL
- HDL: 40 mg/dL or higher
- Triglycerides: Less than 150 mg/dL

Although risk factors of age, gender and family history cannot be altered, reduction of excess weight, physical activity and a healthy diet can lower the risk of high cholesterol.

Studies have shown that lowering cholesterol level can prevent heart disease among those without any prior heart disease and can prevent death from heart disease among those with existing heart disease.<sup>xxxiv</sup>



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1995-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

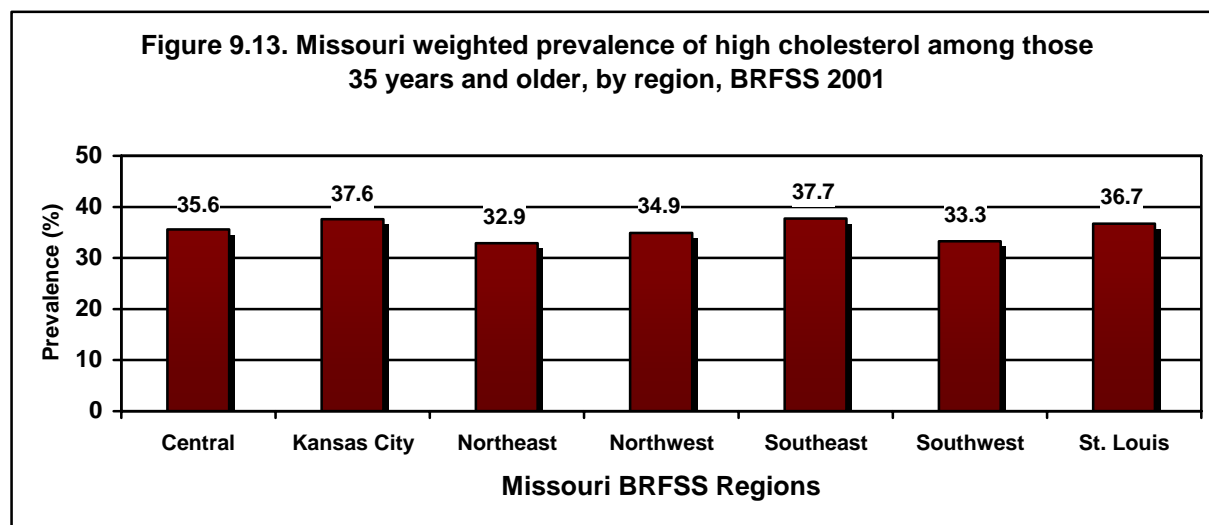
## High Cholesterol Results

### *Survey Question:*

“Have you ever been told by a doctor, nurse, or other health professional that your blood cholesterol is high?”

Overall, 36% of Missourians, age 35 years and older, were told that they have high cholesterol. An estimated 86.2% of Missouri adults, age 35 years and older, have had a cholesterol check and 94.5% have had a cholesterol check within the past 5 years. Figure 9.13 illustrates that there is much variation among the regions. The Kansas City, Southeast and St. Louis regions have the highest prevalence of high blood cholesterol among those 35 years and older. The Northeast (32.9%) and Southwest (33.3%) regions have the lowest prevalence of high blood cholesterol.

In Table 9.6, data shows that men and women have similar prevalence of high cholesterol (36%). Whites and those of other races are more likely than blacks to have high cholesterol. Those with a lower income level are more likely to have high cholesterol compared to those of a higher income level.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 9.6. Missouri weighted prevalence of high cholesterol among those 35 years and older, by socio-demographics, BRFSS 2001**

Demographic	High cholesterol, age 35 years and older	
	Prevalence (%)	95% CI
Total	36.1	33.5-38.7
Gender		
Female	36.4	33.3-39.6
Male	35.7	31.4-39.9
Race		
Black	25.9	16.4-35.3
Other	43.2	28.4-58.0
White	37.0	34.3-39.8
Education		
Less than High School	39.7	33.0-46.4
High School	40.7	36.2-45.2
Some college/college grad	32.2	28.7-35.7
Income		
<\$15,000	43.3	35.5-51.1
\$15-24,999	37.3	31.4-43.1
\$25-34,999	37.0	30.6-43.4
\$35-49,999	34.2	27.7-40.7
\$50-74,999	34.5	27.7-41.3
\$75,000+	30.0	23.3-36.7

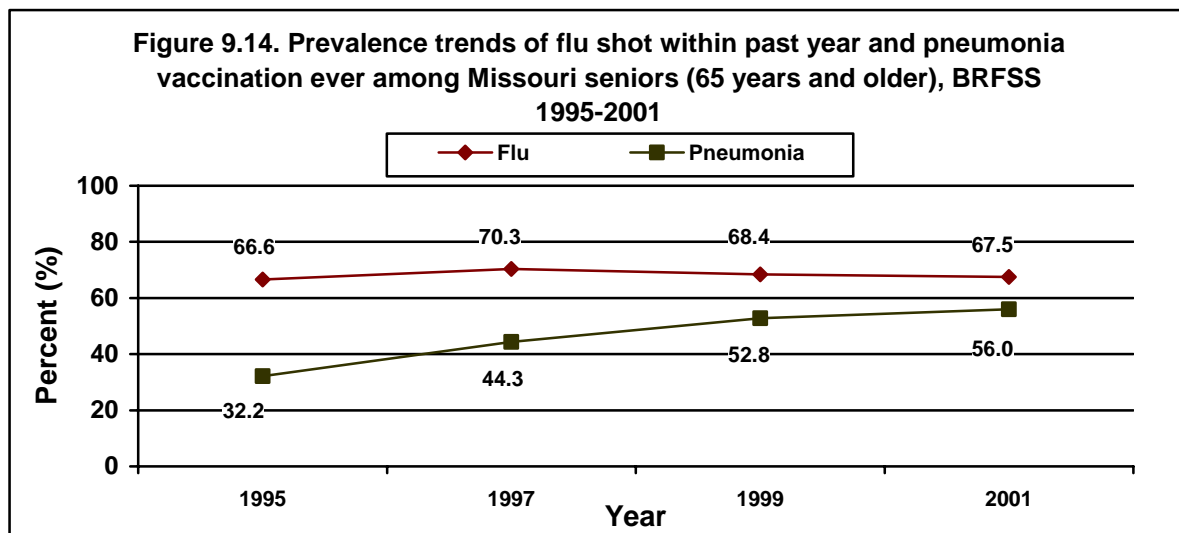
# IMMUNIZATIONS

## Background

Influenza is a contagious viral respiratory condition afflicting a large number of people every year. Although the most common complication caused by influenza is pneumonia, other complications include dehydration, worsening of certain chronic health conditions (i.e., congestive heart failure, asthma, or diabetes), or sinus problems and ear infections in children. Therefore, high-risk populations include those aged 65 years and older, children under age 2, and persons of any age with chronic medical conditions.

Influenza and pneumonia combined are the seventh leading cause of death in the United States and Missouri. “In Missouri, influenza and pneumonia are associated with approximately 1,500 - 3,000 deaths per year.”<sup>xxxv</sup> “Ninety percent of the 1,594 deaths in Missouri in 2001 occurred in people over 65.”<sup>xxxvi</sup>

Figure 9.14 illustrates the trend of receiving a flu shot within the past year and pneumonia vaccination for Missouri adults age 65 years and older. The prevalence of receiving a flu shot has remained fairly steady while pneumonia vaccinations have experienced a gradual increase from 1995 to 2001.



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): BRFSS 1995-2001, <http://www.dhss.mo.gov/BRFSSMICA/>

## Immunization Results

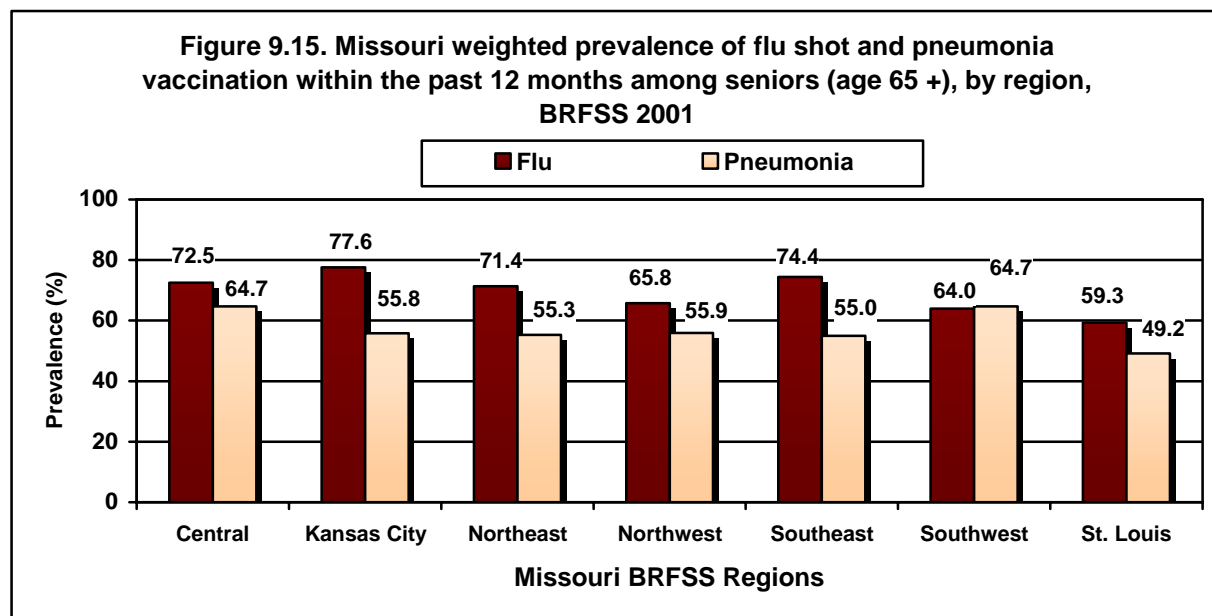
### *Survey Questions:*

“During the past 12 months, have you had a flu shot?”

“Have you ever had a pneumonia shot?”

Over 67% of Missouri seniors, age 65 and older, received the flu shot and 56% had received a pneumonia vaccination within the past 12 months. Geographically, there was little variation in immunization coverage (Figure 9.15). St. Louis had the lowest immunization coverage for pneumonia vaccination (49.2%) and the flu shot (59.3%). The Kansas City region (77.6%) and the Southeast (74.4%) had the highest coverage for the flu shot.

Table 9.7 shows that men (70.4%) were more likely to have the flu shot than women (65.5%) and slightly more likely to have received the pneumonia vaccination. Whites were much more likely to receive both the flu (69.9%) and pneumonia (58.3%) vaccinations than were blacks (34.9% and 22.5%, respectively) or other races. Those with more than a high school education were more likely to have these vaccinations than those with less than a high school education.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.



**Table 9.7. Missouri weighted prevalence of flu shot and pneumonia vaccination within the past 12 months among seniors (age 65 +), by socio-demographics, BRFSS 2001**

Demographic	Flu shot in past 12 months		Pneumonia vaccination in past 12 months	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	67.5	63.3-71.6	56.0	51.6-60.4
Gender				
Female	65.5	60.2-70.8	55.6	50.3-61.0
Male	70.4	63.6-77.1	56.5	49.0-64.0
Race				
Black	34.9	15.6-54.2	22.5	6.5-38.6
Other	40.7	16.7-64.7	42.1	17.3-66.9
White	69.9	65.7-74.2	58.3	53.7-62.9
Education				
< High School	56.2	47.7-64.8	49.5	41.1-57.9
High School	71.2	64.8-77.6	58.6	51.5-65.8
> High School	71.4	64.6-78.3	57.7	50.3-65.2
Income				
<\$15,000	58.9	49.1-68.7	48.2	38.5-57.9
\$15-24,999	58.2	50.0-66.3	58.5	50.4-66.6
\$25-34,999	75.5	66.3-84.7	62.7	51.5-73.8
\$35-49,999	86.7	76.5-97.0	53.7	38.1-69.3
\$50-74,999	66.7	46.2-87.2	67.2	46.4-88.0
\$75,000+	87.8	69.3-100.0	59.9	23.4-91.5

## PREVENTIVE SCREENINGS

### Background

The following cancer screening guidelines are recommended for those people at average risk for cancer.<sup>xxxvii</sup> For people who are at increased risk for certain cancers may need to follow a different screening schedule, such as starting at an earlier age or being screened more often.

### Recommendations:

- Prostate Cancer: Both the prostate-specific antigen (PSA) blood test and digital rectal examination (DRE) should be performed annually, beginning at age 50. Men at high risk (African-American men and men with a strong family of one or more first-degree relatives (father, brothers) diagnosed at an early age) should begin testing at age 45.
- Colorectal Cancer: Beginning at age 50, both men and women at average risk for developing colorectal cancer should follow one of these five testing schedules:
  - Annual fecal occult blood test (FOBT) (take-home kit) or fecal immunochemical test (FIT) Flexible sigmoidoscopy every 5 years
  - Annual FOBT or FIT plus flexible sigmoidoscopy every 5 years\*
  - Double-contrast barium enema every 5 years
  - Colonoscopy every 10 years

\*Preferred schedule.

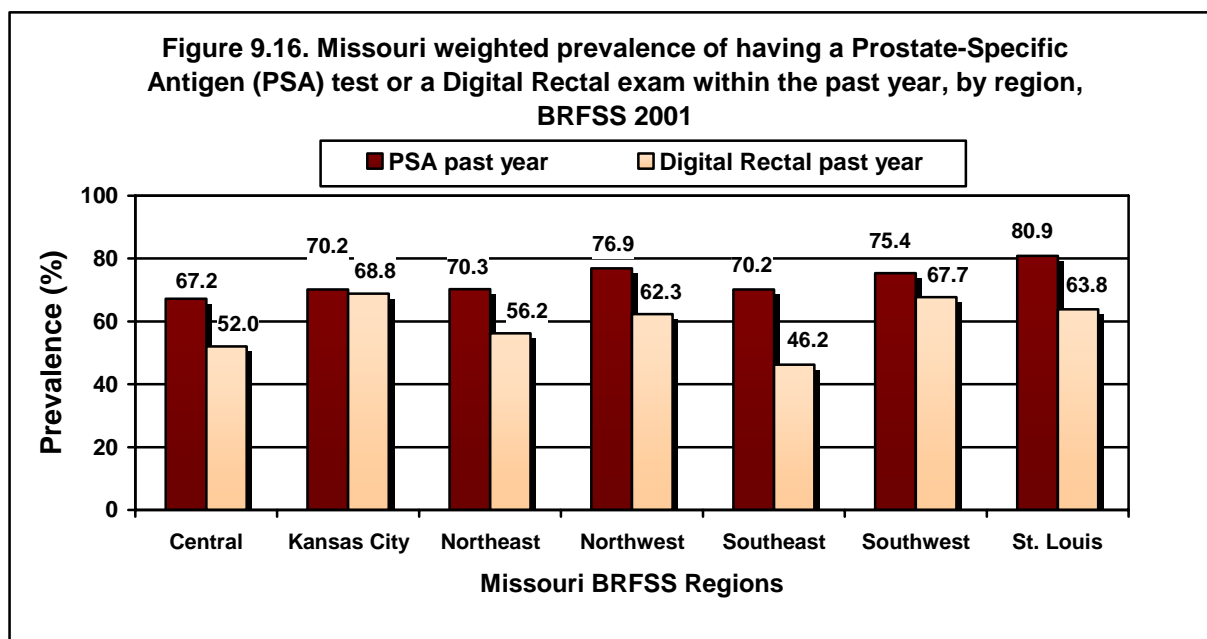
## Prostate Cancer Screening Results

### *Survey Questions:*

If you have ever had a PSA test, “how long has it been since you had your last PSA test?”

If you have ever had a digital rectal exam, “how long has it been since your last digital rectal exam?”

Nearly 66% of men reported having a PSA test and 75% reported having a digital rectal exam to test for prostate cancer. Among those who have had the PSA test ever, approximately 60-80% have had one within the past year (Figure 9.16). The Central region (67.2%) showed the lowest prevalence of PSA test within the past year and St. Louis (80.9%) had the highest. Although the Southeast region had a high prevalence of men getting their PSA test, only 46% received the digital rectal exam within the past year.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

## Colorectal Cancer Screening

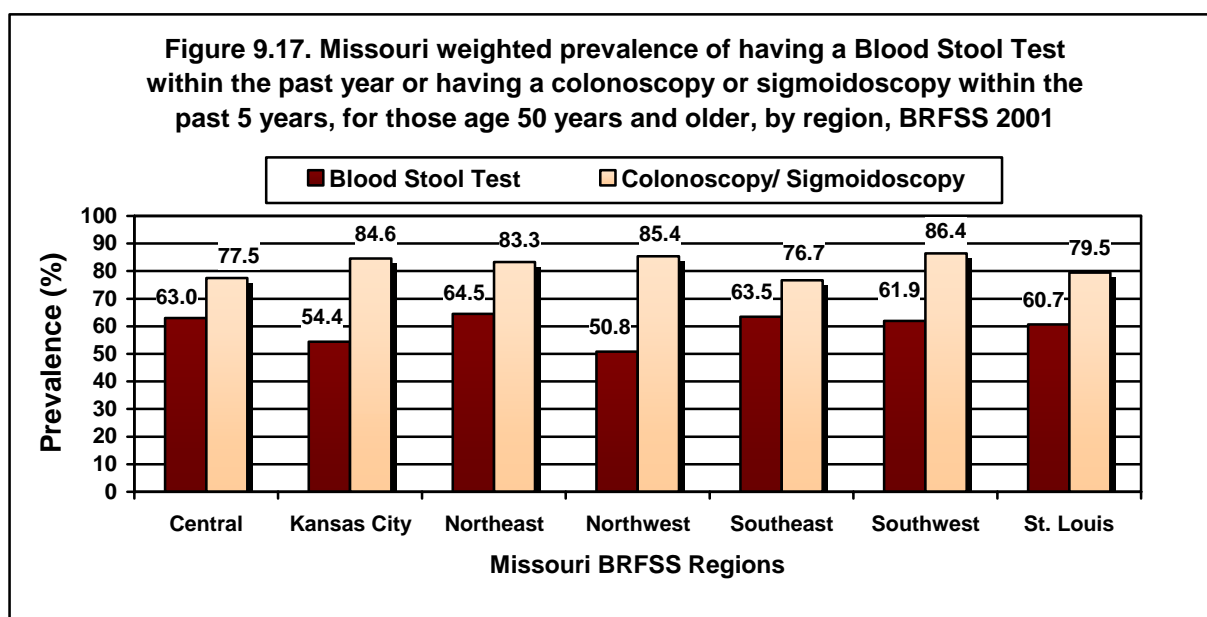
### *Survey Questions:*

If you have ever had a blood stool test, “how long has it been since you had your last blood stool test using a home kit?”

If you have ever had a sigmoidoscopy or colonoscopy, “how long has it been since your last sigmoidoscopy or colonoscopy?”

Over 44% and 43% of adults, age 50 and older, have ever had a blood stool test or sigmoidoscopy/colonoscopy, respectively, to screen for colorectal cancer. Among those who have had a blood stool test, 60% have had it within the past year. Among those who have had a colonoscopy or sigmoidoscopy, 82% have had one in the past 5 years.

Throughout Missouri, between 50-65% have had a blood stool test within the past year (Figure 9.17). Furthermore, 77-86% have had a colonoscopy or sigmoidoscopy within the past years for those who are age 50 years and older. Northwest region of Missouri shows the lowest prevalence of blood stool test (50.8%). Table 9.8 demonstrates that men and women were equally likely (60%) to have a blood stool test within the past year, but men (85.2%) were more likely than women (78.7%) to have a colonoscopy or sigmoidoscopy in the past 5 years. Blacks and other races were more likely than whites to have had both the blood stool test and colonoscopy or sigmoidoscopy test. Those with higher education levels were more likely to have had the blood stool test. Income level did not show any notable relationship with either of these screenings.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 9.8. Missouri weighted prevalence of having a blood stool test within the past year or having a colonoscopy or sigmoidoscopy within the past 5 years, for those age 50 years and older, by socio-demographics, BRFSS 2001**

Demographic	Blood Stool Test in past year, Age 50 and older		Colonoscopy/Sigmoidoscopy in past 5 years, age 50 and older	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	59.9	54.9-65.0	81.6	77.8-85.4
Gender				
Female	59.9	53.8-66.1	78.7	73.8-83.6
Male	59.9	51.7-68.2	85.2	79.2-91.1
Race				
Black	82.2	63.6-100.0	90.0	76.4-100.0
Other	79.7	50.7-100.0	90.2	71.0-100.0
White	57.9	52.7-63.2	81.6	77.7-85.6
Education				
< High School	50.3	37.2-63.3	83.7	75.0-92.4
High School	59.2	51.0-67.4	78.8	71.7-86.0
> High School	62.6	55.2-69.9	83.1	78.4-87.9
Income				
<\$15,000	57.6	44.1-71.0	86.4	78.9-93.8
\$15-24,999	67.3	57.8-76.8	80.0	70.9-89.1
\$25-34,999	59.6	47.5-71.7	78.9	70.7-87.0
\$35-49,999	54.8	41.0-68.6	75.1	62.6-87.6
\$50-74,999	60.6	46.3-74.9	79.9	69.7-90.2
\$75,000+	60.9	41.6-80.1	86.7	76.1-97.3

# 10 ORAL HEALTH

## Background

Tooth decay affects 95% of all adults. Gum disease affects 25% of all adults.<sup>xxxviii</sup> An increasing number of older adults are retaining most of their teeth with the resulting problem of more tooth decay. However, tooth loss still remains a problem for older adults. Tooth loss may contribute to nutrition problems due to inability to consume certain types of foods. For adults over the age of 60 years, 25% have lost their teeth due to tooth decay and advanced gum disease.<sup>xxxix</sup>

Dental insurance is even less common than having health insurance. For every adult that does not have health insurance there are three without dental insurance. Consequently, less than two-thirds of adults report having visited a dentist in the past 12 months. Those with an income level at or above the poverty are twice as likely to report a dental visit in the past 12 months compared to those who are below poverty.<sup>xl</sup>

## Oral Health Results

### *Survey Questions:*

“How long has it been since you last visited a dentist or a dental clinic for any reason?”

“How long has it been since you had your teeth cleaned by a dentist or dental hygienist?”

“Do you have any kind of insurance coverage that pays for some or all of your routine dental care, including dental insurance, prepaid plans such as HMOs, or government plans such as Medicaid?”

Among Missouri respondents, 66.8% report having visited a dentist within the last year and 68.8 report getting their teeth cleaned within the last year. Only 56.7% report having some or all dental insurance that covers part or all of their routine dental care.

**Table 10.1. Missouri weighted prevalence of dental care and dental insurance, BRFSS 2001**

Oral Health in Missouri		
BRFSS Questions	Prevalence (%)	95% CI
Dental visit within the last year	66.8	64.8-68.7
Teeth cleaned within the last year	68.8	66.8-70.9
Some or all dental insurance*	56.7	54.6-58.7

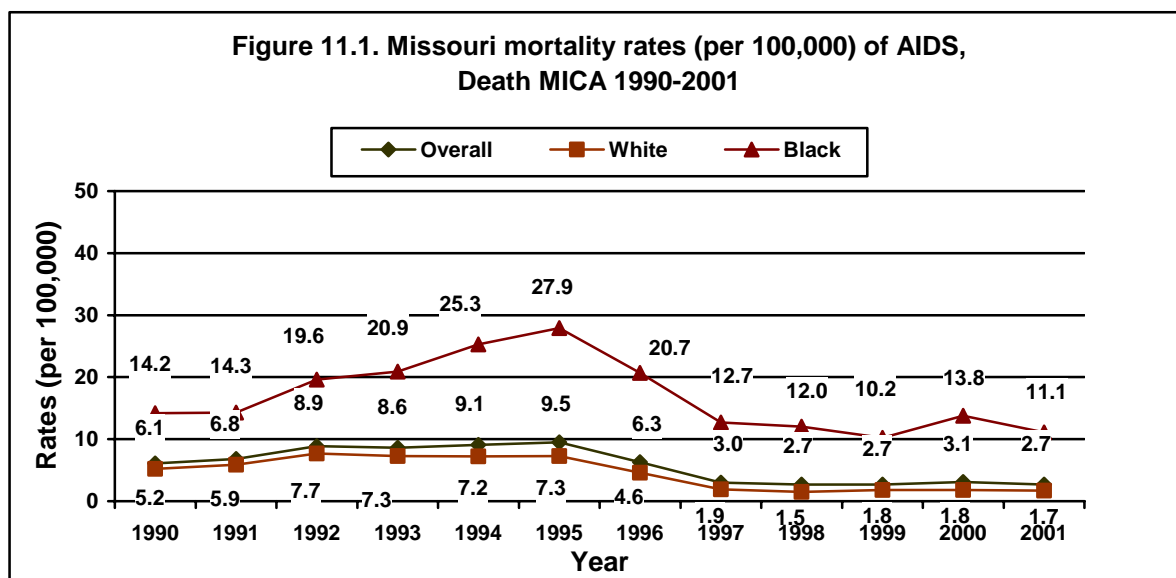
\*Do you have any kind of insurance coverage that pays for some or all of your routine dental care, including dental insurance, prepaid plans such as HMOs, or government plans such as Medicaid?

# 11 HIV/AIDS

## Background

Those persons who are in the early stages of the disease are classified as an HIV case and those in the end stages of the disease are classified as an AIDS case. “At the end of 2001, an estimated total of 362,827 persons in the U.S. were living with AIDS.”<sup>xli</sup>

Figure 11.1 illustrates the trend of AIDS deaths in Missouri from 1990-2001 showing the peak around 1995 and then tapering off. There appears to be a steady rate and a slight decline in 2001.



Source: Missouri Department of Health and Senior Services, Missouri Information for Community Assessment (MICA): Death 1990-2001, <http://www.dhss.mo.gov/DeathMICA/>

## HIV/AIDS Results

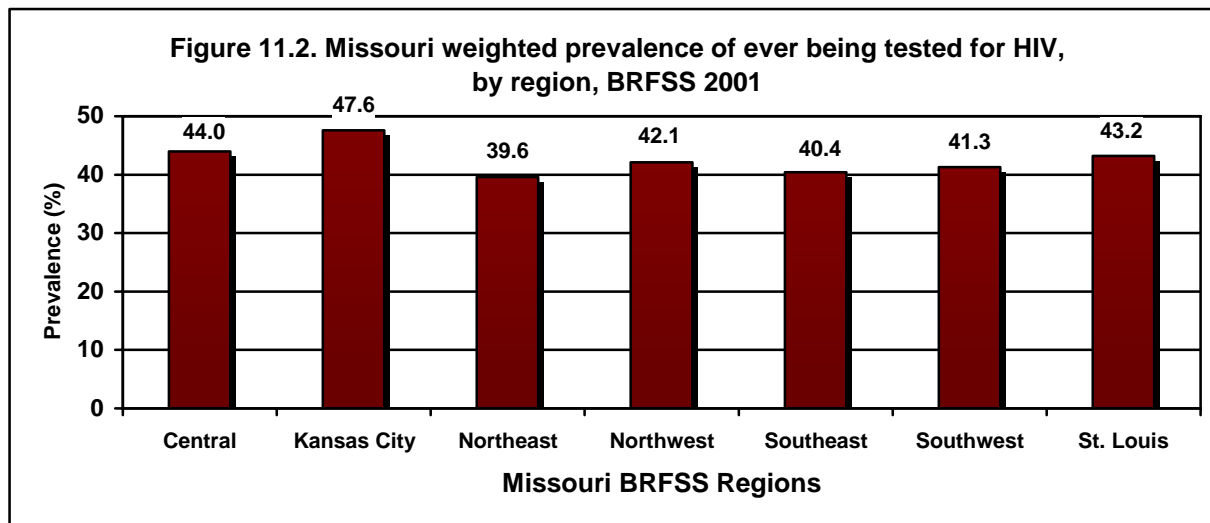
### Survey Questions:

“As far as you know, have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation.”

“In the past 12 months has a doctor, nurse, or other health professional talked to you about preventing sexually transmitted diseases through condom use?”

Missouri adults were asked if they were ever tested for HIV. An estimated 43.4% of adults were tested for HIV. Regionally, there is very little variation, however, Kansas City had a slightly higher percentage of adults tested for HIV (Figure 11.2). Table 11.1 shows females and blacks were more likely to be tested and more likely to have talked with a doctor in the past 12 months about using

condoms to prevent Sexually Transmitted Diseases (STDs). Those with less than a high school education (24.6%) were more likely to discuss condom use with a doctor in the past 12 months than those with higher education. Those with a lower income bracket were more likely to talk with a doctor about using condoms to prevent STDs and more likely to have ever been tested for HIV than those with a higher income. An estimated 26.6% of those with an income level of less than \$15,000 talked with a doctor about condoms to prevent STDs compared to 6.8% of those with an income above \$75,000.



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 11.1. Missouri weighted prevalence of ever being tested for HIV and having talked with a doctor in the past 12 months about using condoms to prevent Sexually Transmitted Diseases (STDs), by socio-demographics, BRFSS 2001**

Demographic	Ever been tested for HIV		Talked with doctor in past 12 months to prevent STDs by using condoms	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	43.4	41.1-45.8	13.5	11.9-15.0
Gender				
Female	45.6	42.6-48.7	17.9	15.6-20.2
Male	41.1	37.5-44.7	8.9	6.9-10.9
Race				
Black	67.2	57.7-76.8	26.4	18.6-34.3
Other	56.5	45.1-68.0	21.0	10.7-31.3
White	40.0	37.5-42.5	11.4	9.9-13.0
Education				
< High School	45.5	37.9-53.1	24.6	18.0-31.2
High School	40.1	36.1-44.0	12.1	9.6-14.5
> High School	44.8	41.6-47.9	12.5	10.5-14.5
Income				
<\$15,000	52.7	45.2-60.2	26.6	19.8-33.4
\$15-24,999	46.7	40.9-52.6	23.9	19.1-28.6
\$25-34,999	50.8	45.3-56.4	15.7	11.6-19.8
\$35-49,999	44.0	38.7-49.3	9.4	6.6-12.2
\$50-74,999	41.2	35.3-47.0	8.9	5.5-12.3
\$75,000+	39.5	33.2-45.9	6.8	3.2-10.3

# 12 FIREARMS

## Background

Firearms-related injuries in the United States have declined since 1993, but they remain the second leading cause of injury mortality in 2000.<sup>xlii</sup> “Of 28,663 firearms-related deaths in 2000 (an average of 79 per day), 57.9% were suicides, 37.7% were homicides, 2.7% were unintentional, and an additional 1.7% were legal interventions or of undetermined intent.”<sup>xliii</sup> “An estimated 24.3% of the 1,430,693 violent crimes (murder, aggravated assault, rape, and robbery) committed in the United States in 1999 were committed with a firearm.”<sup>xliv</sup>

Child access prevention (CAP) laws are designed to limit children's access to and use of firearms in homes. The laws require firearms owners to store their firearms locked, unloaded, or both, and make the firearm owners liable when children use a household firearm to threaten or harm themselves or others.<sup>xlv</sup>

## Firearms Results

### *Survey Questions:*

“Are any firearms now kept in or around your home? Include those kept in a garage, outdoor storage area, car, truck, or other motor vehicle.”

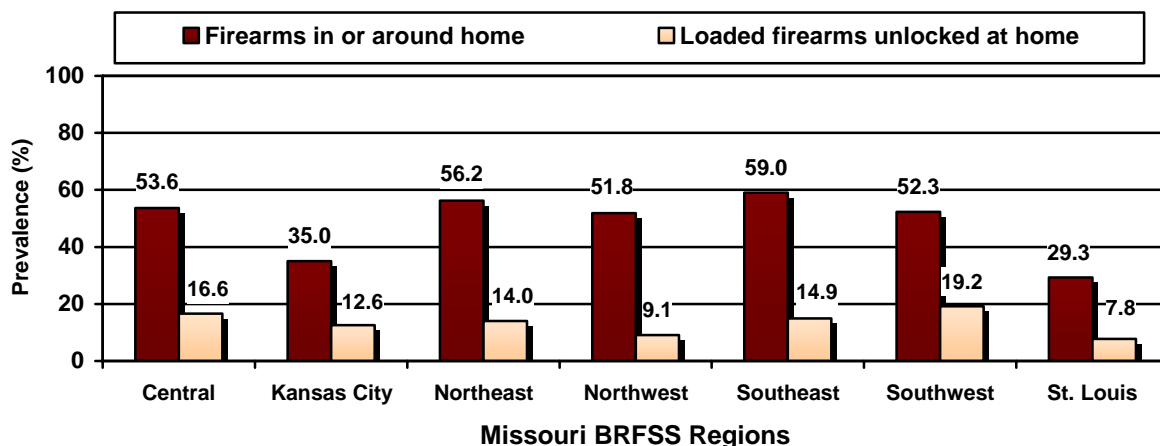
“Is there a firearm in or around your home that is now both loaded and unlocked?”

The majority of Missouri's population that are not residing in the major metropolitan areas of St. Louis and Kansas City keep a firearm in or around the house (Figure 12.1). Among those who keep a firearm, there is a 7.8% to 19.2% likelihood that it is kept unlocked at home.

Among Missouri adults, 41.8% reported keeping a firearm in or around the home and among those individuals 13.4% reported having them loaded and unlocked at home. Men and whites were more likely to have a firearm at home and also more likely to have it loaded and unlocked. Those with a high school education and those in the \$35-74,999 income range were more likely to have firearms in or around the home. As income and education increased, the likelihood of them keeping firearms loaded and unlocked went down.



**Figure 12.1. Missouri weighted prevalence of firearms kept in or around the home and having loaded firearms unlocked at home, by region, BRFSS 2001**



Source: Missouri Department of Health and Senior Services, Missouri Behavioral Risk Factor Surveillance System, 2001.

**Table 12.1. Missouri weighted prevalence of firearms kept in or around the home and if they are loaded and unlocked at home, BRFSS 2001**

Demographic	Firearms kept in or Around the home		Firearms loaded and Unlocked at home	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	41.8	39.8-43.9	13.4	11.5-15.4
Gender				
Female	34.6	32.1-37.0	9.4	7.1-11.7
Male	50.1	46.7-53.5	16.6	13.6-19.6
Race				
Black	16.3	9.7-22.9	2.4	0.0-6.2
Other	28.1	19.4-36.9	14.9	4.4-25.5
White	45.0	42.8-47.3	13.6	11.5-15.6
Education				
< High School	35.3	30.0-40.7	15.1	9.7-20.5
High School	48.9	45.3-52.5	14.4	11.1-17.7
> High School	39.0	36.2-41.8	12.2	9.6-14.9
Income				
<\$15,000	22.7	18.2-27.3	22.4	13.7-31.1
\$15-24,999	34.3	30.0-38.6	12.9	8.6-17.2
\$25-34,999	44.4	39.5-49.3	18.7	13.4-23.9
\$35-49,999	51.6	46.6-56.7	12.4	8.1-16.7
\$50-74,999	52.3	46.6-58.0	12.8	8.1-17.6
\$75,000+	40.2	34.1-46.4	8.2	3.6-12.8

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- <sup>ix</sup> [http://www.dhss.mo.gov/MAOPdocs/Arthritis\\_Report.pdf](http://www.dhss.mo.gov/MAOPdocs/Arthritis_Report.pdf) (June 8, 2005) Arthritis Burden Report
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- <sup>xii</sup> Asthma Burden report
- <sup>xiii</sup> Asthma action Plan
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- <sup>xxii</sup> <http://www.cdc.gov/nccdphp/dnpa/physical/importance/index.htm>
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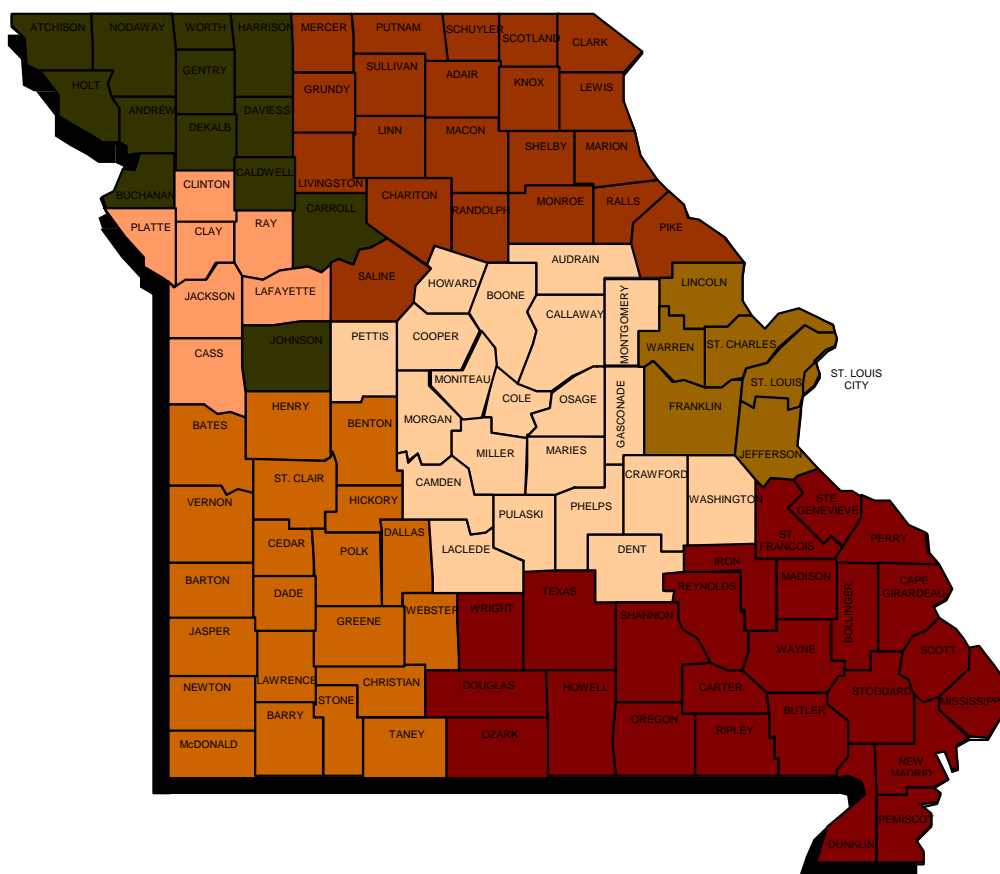
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## Appendix 1

### The Seven BRFSS Regions of Missouri



#### BRFSS REGIONS

**Kansas City Metro Region** (MO KC MSA counties pulled out of the Northwestern Health District): Jackson, Cass, Lafayette, Clay, Ray, Platte, Clinton

**ST. Louis Metro Region** (Eastern Health District plus Lincoln and Warren Counties/MO STL MSA counties): STL City, STL County, Franklin, Jefferson, St. Charles, Lincoln, Warren

**Central Region** (Central Health District minus Lincoln and Warren counties): Boone, Cole, Miller, Camden, Maries, Phelps, Crawford, Osage, Gasconade, Montgomery, Callaway, Audrain, Howard, Cooper, Moniteau, Morgan, Pettis, Washington, Pulaski, Laclede, Dent

**Southwestern Region** (same as Southwestern Health District): Greene, Lawrence, Barry, Stone, Taney, Christian, Webster, Dallas, Polk, Cedar, Dade, McDonald, Newton, Jasper, Barton, Vernon, Bates, Henry, Benton, Hickory, St. Clair

**Southeastern Region** (same as Southeastern Health District): Cape Girardeau, Perry, Ste. Genevieve, St. Francois, Iron, Reynolds, Shannon, Texas, Wright, Douglas, Ozark, Howell, Oregon, Ripley, Butler, Dunklin, Pemiscot, New Madrid, Mississippi, Scott, Stoddard, Carter, Wayne, Bollinger, Madison

**Northwestern Region** (Northwestern Health District minus MO KC Metro counties): Buchanan, Andrew, Caldwell, Carroll, DeKalb, Daviess, Harrison, Gentry, Holt, Nodaway, Atchison, Worth, Johnson

**Northeastern Region** (same as Northeastern Health District): Saline, Macon, Chariton, Randolph, Monroe, Pike, Ralls, Marion, Shelby, Linn, Livingston, Grundy, Sullivan, Adair, Knox, Lewis, Clark, Scotland, Schuyler, Putnam, Mercer